DOCUMENT RESUME

ED 343 613 IR 053 990

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TITLE Learning COMCAT (Computer Output Microform Catalog): Library Training Program for Foreign Students at New York Institute of Technology.
PUB DATE 2 Jun 91
NOTE 125p.; Master's Thesis, New York Institute of Technology.
PUB TYPE Dissertations/Theses - Masters Theses (042) -- Reports - Research/Technical (143) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC05 Plus Postage.
DESCRIPTORS College Libraries; *Computer Output Microfilm; *Foreign Students; Higher Education; *Instructional Design; *Library Catalogs; *Library Instruction; *Material Development; Questionnaires; Research Skills; Research Tools; Systems Development
IDENTIFIERS *New York Institute of Technology

ABSTRACT

This thesis reports on the designer's plans and experiences in carrying out the design, development, implementation, and evaluation of a project, the purpose of which was to develop a training program that would enable foreign students at the New York Institute of Technology (NYIT) to use the Computer Output Microform Catalog (COMCAT) and to develop a sense of library research skills. The project was conducted using the principles and techniques of instructional system design (ISD). The report consists of seven chapters: (1) Introduction (overview, background, statement of the problem, project purpose, definition of terms, assumptions, limitations, method and procedures); (2) Analysis (needs analysis, instructional goal, literature review, plan for design and development effort); (3) Design (instructional task analysis, instructional objectives, entry behaviors defined, group and sequence objectives, learning activities specification, assessment system specification, evaluation system specification, learning transfer system specification, review and selection of existing materials);(4) Development (learning activity development scheme, learning activity development, learning activity review, materials for evaluation produced); (5) Implementation (materials for implementation reproduced, instructional delivery, data collection); (6) Evaluation (formative evaluation, summative evaluation learning transfer); and (7) Summary and Recommendations (methods and procedures used, conclusions, recommendations). Thirteen appendices contain copies of pretests and posttests, questionnaires, library guides, and supporting data for the study. (MAB)

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# LEARNING COMCAT

# (COMPUTER OUTPUT MICROFORM CATALOG):

# LIBRARY TRAINING PROGRAM FOR FOREIGN STUDENTS

# AT NEW YORK INSTITUTE OF TECHNOLOGY

by

Ching-hsin Chiang

B.A. 1987, Fu-Jen Catholic University

A Thesis/Project

submitted to The Faculty of the

School of Media and Arts

of The New York Institute of Technology in partial

satisfaction of the requirements for the degree of

Master of Science

June 2, 1991

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Thesis/Project

# LEARNING COMCAT (COMPUTER OUTPUT MICROFORM CATALOG): LIBRARY TRAINING PROGRAM FOR FOREIGN STUDENTS AT NEW YORK INSTITUTE OF TECHNOLOGY

This project was conducted using the principles and techniques of instructional system design (ISD). The document is a report of the designer's plans and experiences in carrying out the design, development, implementation, and evaluation of the project. A plan, budget, analysis of findings, and recommendations are included.

written by

Ching-hsin Chiang

in partial satisfaction
of the requirements for the degree of

Master of Science

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## ACKNOWLEDGEMENTS

I owe a debt of gratitude to my thesis/project advisor, Dr. Angus Reynolds, Associate Dean and Professor of Training and Learning Technology. He gave generously of his time, expertise, and guidance. I also want to thank Dr. Cheng, she helped me to produce the development plan. Dr. Penrose and Dr. Yen were my instructors for the ISD and Implementation courses. Their comments on this project was the guidance of continuing this document.

Particular thanks go to the librarians in NYIT Central Islip library who provided the materials and all the foreign students at NYIT participated in this program.

Lastly, I would like to thank my family, especially my mother and two sisters in California. To all my friends and classmates who gave me any kind of help, not only in studying but also in living, I am grateful. You were all my partners in this endeavor.

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# CHAPTER 1

# INTRODUCTION

## Overview

This document contains all the information for the development and the delivery of a training program on using COMCAT (Computer Output Microform Catalog) in libraries at New York Institute of Technology. The instructional design presented here focuses on a program that will help foreign students do their research in libraries at NYIT. The entire document is based on the Instructional Design process. All procedures, instructional material, and evaluation results are contained within this systematic design of instruction.

## Background

Today is an age of information explosion. There are many kinds of materials used in our lives. The library becomes a major place to store this information. Education has always included a commitment to a strong library collection and some instruction in its use. Moreover, in recent years, more educators and librarians at all levels have decided that every citizen should have basic skills in library research.

The need for quick and current information is becoming pervasive in every human endeavor. Students who do not acquire essential library-use competencies are now more likely to consider it a major shortcoming in their education.

In June 1978, after a conference on integrating academic libraries into the educational mainstream, a small group of major academic officers advocated an expanded educational role for libraries by issuing the following guidelines:

1. Universities and colleges should explore and feature the overall contribution of professional librarians to the general teaching function of their educational activities.

2. The concept of the library as a "teaching library" increases the effectiveness of the entire academic mission of academic institutions. It is a flexible resource that can respond to the changing needs of students. It is an essential means for increasing the general research skills of students.

3. Further, it is important to emphasize that the teaching library and bibliographic instruction share a commonality of interest across colleges and universities of all sizes and missions.

The NYIT library system is a major educational resources in support of instruction and research. Composed of more than 198,000 catalogued volumes and subscriptions to over 3,300 periodicals and technical journals, together with over 377,100 microforms, holdings constitute comprehensive basic collections in the sciences, technologies, arts, and humanities.

NYIT libraries are maintained at all campuses. There are two in Old Westbury, the new one is George & Gertrude Wisser Memorial Library. The other one is in Education Hall. The library in Central Islip is in Sunburst; and it is located in

second floor of Metropolitan Center. All the NYIT students have access to total collections of these libraries in different campuses.

The library catalogs of New York Institute of Technology constitute a major bibliographic resource providing access to the library collections. One of the primary concerns of the library staff is to make this information available to the students as quickly and efficiently as possible.

The bibliographic instruction is very necessary and important to help students be conversant with library research skills--especially for the foreign students at New York Institute of Technology. The designer worked at the Social Science Library of Fu-Jen Catholic University in Taiwan for four years. There are three libraries with different topic collection in Fu-Jen --just like NYIT. So the designer chose the library on the NYIT Central Islip campus to be the setting of this project.

## Statement of the Problem

Once a piece of information is acquired, the primary problem is how to retrieve it from the hundreds, thousands, or millions of bits of information in the library. There are a number of avenues open, from oral communication to abstracts. But, for dealing with large information units such as books, recordings, films, periodicals, or reports, the normal finding device is the catalog system. The catalog is the main bibliographic instrument in library.

A machine-readable database has been created to provide maximum flexibility and capabilities for an on-line catalog. As an interim measure, and as a back-up for a future on-line catalog, the NYIT libraries will make the entire database available to as wide a range of service points as possible, with COM (Computer Output Microform) catalogs.

The COM catalog is not simply the adoption of another form of catalog, but a basic change in the nature of library use. Card catalogs have become obsolete as a means of bibliographic control. Although an on-line catalog will be the long-term objective, the COM catalog offers a logical intermediate step, creating and utilizing the same machine readable records which will serve as the database for the on-line catalog of the future.

The library instruction is not so popular in other countries. This is why the designer planed this training program especially for foreign students. The designer is also a foreign student at NYIT, and had a bachelor degree of Library Science in Taiwan. It is proper for her to design such a library bibliographic instruction program.

Because adults are motivated to learn after they experience a need in their life situations, they enter an educational activity with a task-centered or problem-centered orientation to learning. For the most part, adults do not learn for the sake of learning; they learn in order to be able to perform a task or solve a problem. This becomes particularly important in training adults (Knowles, 1980).

When foreign students come to NYIT, there is a library orientation to teach them how to use the libraries. But it is a very brief guide. The students won't identify the problems in using the system if they can't use the COMCAT under an actual need. This is the problem in this bibliographic instruction design.

## Purpose of the Project

The purpose of this project is to enable foreign students to use the COMCAT in NYIT libraries. The designer developed a bibliographic instruction program that focused on how to operate the reader of COMCAT and identify the call number of desired books.

The intention was to analyze, design, develop, and evaluate a training program that would enable foreign students at NYIT to develop a sense of research skills in libraries. The interests of the target audience are motivated by the information or benefits received once the lesson plan is completed.

## Definition of Terms

Certain terms in this document are capitalized. The terms have been defined within the context of the bibliographic instruction. The terms or words which appear in this document are the following:

**Catalog** - A list of library materials contained in a collection, a library or a group of libraries, arranged according

to some definite plan.

**COMCAT** - Abbreviation for the "Computer Output Microform Catalog", the microfiche catalog which lists material available at all NYIT libraries.

**Call Number** - The special number assigned to a certain book so that the catalog users can find it. NYIT libraries arrange books by Library of Congress call number. Every letter and number written be exact.

**Access Point** - A name, term, code, etc., under which COMCAT may be searched and identified.

**Author** - The person chiefly responsible for the creation of the intellectual or artistic content of a work.

**Title** - A word, phrase, character, or a group of characters, normally appearing in an item, namely the item or the work contained in it.

**Subject** - A name, word, or phrase of the area in which COMCAT users are researching.

**Heading** - A name, word, or phrase placed at the head of a catalog entry to provide an access point in the catalog.

**Cross-Reference** - When the COMCAT users look up information and it sends them to another subject heading to find more about the topic.

**LC Headings** - The Library of Congress system of classifying books, the system that all NYIT libraries use.

**Vertical Scan** - The handle on the left side of the COMCAT reader, moves the roll of microfiche up and down.

**Horizontal Scan** - The round wheel on the right side of the COMCAT reader, moves the microfiche from left to right or right to left.

## Assumptions

1. That trainees are highly motivated and eager to learn the library research skills.

2. That foreign students at NYIT have never taken similar bibliographic instruction in their countries.

3. That this applies to the first semester for those foreign students at NYIT.

## Limitations

1. That this project was developed only for the foreign students at NYIT as part of an in-house training program.

2. That this may not be suitable for American students because library instruction is very common at high school in the United States.

## Method and Procedures

The method chosen in this training plan are based on an instructional system design process. Although, this development process is described in Dick and Carey (1985) and Craig (1987), its basis is in the interservice model (Center for Instructional Technology, 1976). Each source describes five similar areas based on instructional system design process or ISD model. The

segments referenced in this document pay particular attention to the analysis, design, development, implementation, and evaluation process.

**Analysis**

Initially, the designer was faced with the collection of data. Through extensive research she decided that the operating and research skills of COMCAT are needed to be performed for those students.

She chose to gather information through one-on-one interviews and the use an audience analysis survey. She collected trainees' academic information and learning experience of using catalog in libraries through the analysis survey. The survey was designed to point out the strengths and weaknesses of the trainees. See Appendix A.

**Design**

The designer studied methods for the delivery of the lesson plan, and decided on the most efficient form of delivery. Brief lecture and demonstration were used in this training program.

Once the tasks were determined, the next step was to develop the learning objectives. According to Mager (1984) each of the objectives has three parts:

1. Performance - What the trainees will demonstrate.

2. Conditions - What conditions will be present while the trainees performs.

3. Criteria - What the trainees are expected to do in order to success fully completely the program.

**Development**

Specifications resulting from the design phase are flesh-out in the development phase. The learning domains of training were used to plan learning events and activities. For each skill, the internal learning process, the instructional events, and the methods of instruction were planned. The methods of instruction are the use of a lecture and demonstration presentation.

**Implementation**

The materials were delivered to students when this training program was conducted. The performance of students was monitored and data collected for evaluation and remediation. The COMCAT reader was used to demonstrate and facilitate learning.

**Evaluation**

Evaluation is the final phase in the ISD model. The designer used certain indicators including test scores and the questionnaire during this process. As a matter of information, the systematic approach allows for the continual monitoring, adjusting, or correcting of weak areas.

**Summery**

One of the most important tools in library research is the catalog. It is the index to the print and non-print materials in the library. At New York Institute of Technology it is COMCAT. This training program was designed to help foreign students at NYIT do their library research through using COMCAT. It focused on the needs of each student's different major. It was an first

bibliographic instruction that those foreign students took in the United States.

# CHAPTER 2

# ANALYSIS

## Introduction

The first step of the Instructional System Design approach is analysis. This step will provide a blueprint around which a training program can be designed and developed. This is the technique by which training needs are identified and assessed.

A training unit was needed to close the gap between the less-than-perfect performance that prevailed and the error-free performance wanted. Training is considered, among other options, as a possible solution to a problem. This initial portion of the analysis stage is the Needs Analysis. The designer was able to determine that training was the best alternative to select in order to arrive at an acceptable solution.

A review of the existing literature revealed that the particular library instruction program that the designer proposed had not yet been reported. The phase of design and development, including instructional goals and objectives, were planned.

## Needs Analysis

Dick and Carey (1985) defined a need as a gap between what is and what should be. When foreign students were asked to write a paper at school, the first problem they faced was how to search the information. They went to the library and tried to find some books related to their topics. The catalog is most quick and

effective tool to retrieve information from the hundreds, thousands, or millions of items in the library.

A one-on-one interview was conducted before the program. The designer asked some general questions to each student. The summative questions in this interview asked those foreign students whether they need bibliographic instruction before they do their library research. All the interviewees thought it is very necessary and important to them to do research without errors and omissions in libraries.

**Job Task Analysis**

A job task analysis process was conducted to obtain a detailed list of tasks performed by the students for the job in question. Each task consists of many subskills. The hierarchical analysis of these tasks and subskills can be seen Appendix B.

The main tasks are to:

1.0 Operate the reader of COMCAT.

2.0 Distinguish three sections of catalogs.

3.0 Determine what is the access point in your case.

4.0 Use the COMCAT to find the desired books.

5.0 Identify the call number and the other information in a catalog uint.

6.0 Use the subject heading to find the relevant information.

**Target Population Analysis**

The target audience of this training program are foreign

students in New York Institute of Technology. They come from different countries and educational backgrounds. Their status in college ranges from freshman to graduate level. This wide span of educational status means that the level of instruction had to provide for various tracks and had to give the trainee control over the speed and level of difficulty.

A one-on-one interview was conducted to gather students' academic information. It could help the designer to collect the practice materials on different topics that focused on their majors. The results were as Table 1.

**Table 1**

**The Student Data from One-on-one Interview**

| Student | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Sex | F | M | F | F | F | M | M | F |
| Age | 24 | 27 | 30 | 26 | 28 | 31 | 24 | 21 |
| Status | Fr | Gr | Gr | Gr | Se | Gr | Se | Ju |
| Major* | CA | CS | HR | BA | CS | CA | FA | HM |

* CA: Communication Arts CS: Computer Science
BA: Business Administration HR: Human Relations
FA: Fine Arts HM: Hotel Management

There are four students coming form Taiwan. They are Student 2, 4, 5, and 8. Student 1 is from Malaysia. Student 3 is from India. Student 6 and 7 come from Thailand and Japen.

Data on their skills was gathered by a audience analysis survey which was distributed to the students. There were fifteen questions in this survey and students checked the skills they had. The first eight questions were asked about the operating skills of COMCAT, the other seven questions were asked about the bibliographic knowledge. The survey and a summary of the results appear in Appendix C.

This information suggested that the external instruction should support and integrate those internal conditions. Most of those foreign students lacked bibliographic knowledge, especially in the concepts dealing with subject headings. A real case would be given to the student to practice the skills that use subject catalogs to find not only one book, but a series of information.

**Organizational Constrains**

There were no constraints in relation to the design and development of this program. In terms of implementation, the library has the necessary equipment. A COMCAT is needed to demonstrate in this program. Because there are limited readers in library, only one or two can be used in this training program each time. A Library of Congress Subject Headings must be provided by the library in this program for students' reference.

## Instructional Goal

In doing a library research, those foreign students will be able to use COMCAT to retrieve information from library collections. They will apply this knowledge to use the subject

headings to the mostly narrowly focused heading relevant to the research topic. By consulting the Library of Congress Subject Headings, they will avoid wasting time using terms that are not correct.

Another important goal of this training program was to motivate those foreign students to use library resources. Students will be able to improve access to materials by using three different sections of the catalog. This point also can improve the decision making ability of each trainee.

This is a hands-on training program. The operating skill of COMCAT must be trained on the actual reader. The students will see what happens by operating specific parts of it immediately. This is more effective than any other picture or lecture. An exercise would be given to students to practice those skills and be familiar to use the subject catalog.

**Literature, Existing Course, and Material Review**

During its development, library instruction has taken various forms ranging from the orientation tour to a complete curriculum organized around the library. The process of library orientation or instruction as integrated into the traditional college or university setting has involved many type programs.

In 1971, the First Annual Conference on Library Orientation was held at Eastern Michigan University. Annual conferences have been held since then. In the same year, the Bibliographic Instruction Task Force was formed by the Association of College

and Research Libraries (ACRL). In 1975, it began to devise guidelines for bibliographic instruction in academic libraries. The ACRL's revised standards for college libraries, approved in 1975, indicated a widespread recognition by librarians and academicians that bibliographic instruction should be an integral part of higher education.

One of the CAI programs that teaches library research skills at the NYIT library is called Library Research Skills. It was designed and developed by the University of Delaware. The program teaches the use of the card catalog and Library of Congress subject headings, periodical indexes, government documents indexes, and newspaper indexes.

**Related Theory**

Skinner, who is the acknowledged father of programmed learning, was the first educator to insist upon clearly stated objectives and upon maximum permissible error rates. The cornerstone of his behavioral modification theory is reinforcement (Craig, 1987). The sequence of events for establishing conditioned reinforcement is 1) response; 2) neutral stimulus; follow by 3) the primary reinforcement. It is important that this order of events be followed, for if the neutral stimulus is presented before rather than after the response, discrimination, and not conditioned reinforcement will result.

The designer chose the semi-directed module in this instruction program. In this project, information and a

demonstration are given initially, in order to show the students how their own performance should proceed. This is followed by an opportunity for the students to practice the demonstrated procedure. This practice will reinforce those performance skills of students. A continuum for categorizing instructional methods is shown in Table 2.

**Table 2**

**A Continuum for Categorizing Instructional Methods**

| Direct | Semi-Direct | Indirect |
|---|---|---|
| Total System Control<——————>Total Student Control | | |
| Lecture | Demonstration/Performance | Discussion |
| Demonstration | Lecture/Discussion | Brainstorming |
| Film | Case Study | Simulation/Game |
| Videotape | Synergogic Methods | Inquiry Methods |
| Slide/Tape | | |
| Slide/Lecture | Workbook | Research Paper |
| | Study Guide | Computer Simulation |
| Textbook | Programmed Instruction | Contracting |
| Printed Material | CAI | Hypertext |

Another tool for specifying learning behavior is the Bloom Taxonomy of educational objectives. It arranges objectives into three domains: cognitive, affective, and psychomotor. The Bloom

group produced in intricate analysis for each of the first two domains. In the cognitive domain, the taxonomy cites six types of behavior:

1) Knowledge
2) Comprehension
3) Application
4) Analysis
5) Synthesis
6) Evaluation

For the instructional objective in this program, learning the bibliographic concepts is on the Application level. Students applied the skills and knowledge to the library research process.

**Literature Review**

The Library Literature, LISA (Library and Information Science Abstract), and CIJE (Current Index to Journals in Education) were used as reference resources to conduct the literature search. The search was narrowed by qualifying it by date which was from 1988 on. The research retrieved twenty-three articles, a selection of which are summarized below:

1. Fry, T. K. and Kaplowitz, J. (1988). The English 3 library program at UCLA: a follow-up study. Research Strategies, 6(3), 100-108.

Student's library usage, attitudes, and skills were surveyed three years after they had participated in a university library instruction program. Results of the questionnaire, which was based on the design of a pretest developed to evaluate the

program in 1982-83, indicated that most students are using the library on a regular basis.

2. Engeldinger, E. A. (1988). Teaching only the essentials: the thirty-minute stand. Reference Services Review, 6(4), 47-50.

In this article the author describes an instructional model for teaching library skills which consists of a thirty-minute lecture followed by a twenty-minute exercise. Assumptions about learning and the educational process are discussed as well as goal-setting for the class and exercise. It is suggested that this format could be applied to other disciplines.

3. Kuhlthau, C. C. (1988). Developing a model of the library search process: cognitive and affective aspects. RQ, 28(2), 232-242.

Using qualitative methods, this study investigated the library search process of college-bound high school seniors. A six-stage model of the students' search process was developed from the thought, actions, and feelings commonly experienced. Using several theoretical bases, a grounded theory of the process of searching for information was formulated.

4. Osborne, L. N. (1989). Teaching in American academic libraries. International Library Review, 21(1), 9-27.

The author examined the response of American students to library instruction and provides and overview of the educational milieu in which it functions. Topics covered include library in primary and secondary education; the academic environment; the need for academic library instruction; staff considerations; and

content, methods, audiences, and effectiveness of academic library instruction.

5. Tiefel, V. (1989). Evaluating a library user education program: a decade of experience. College and Research Libraries, 50(2), 249-259.

In this article the author describes the method used and results of evaluation of the impact of library instruction on student learning and attitude in the Ohio State University freshman program. The discussion covers common student misperceptions about librarians, the importance of planning reliable and valid evaluations, and recommendations for implementing an evaluation.

6. Morgan, S. (1990). Self-instruction techniques in user education: workbook lecture. Education Libraries Journal, 33(1), 14-39.

The general move toward more student-centered approach to teaching/learning strategies prompted this investigation into the role of self-instruction techniques in user education programmers in higher education. The survey carried out during 1988-89 revealed that the video was the most popular method and that, within one institution, the workbook approach appeared to be a more satisfactory instructional device.

7. Bilal, D. M. (1989). International students' acquisition of library research skills: relationship with their English language proficiency. Reference Librarians, (24), 129-145.

The experimental study involved thirteen students who were

study English at the Florida State University Center for Intensive English Studies. Results of the Product Test showed a moderate correlation between the students' exit TOEFL scores and the post test library skills.

8. Maloney, Y. (1989). Bibliographic instruction for foreign language classes: a pilot project. Research Strategies, 7(2), 61-66.

This article discusses possible correlations between the acquisition of library research skills and the ability of students in undergraduate foreign-language classes to apply the vocabulary acquired in the classroom environment to real-life situations. A pretest, post test, and other teaching aids were part of the methodology used to test instructional effectiveness.

9. Sorenson, V. P. (1988). Bibliographic instruction in a developmental studies program: a paired course approach. Research Strategies, 6(4), 161-167.

A library skills course is paired with an English composition course in a developmental studies program at St. Cloud State University, Minnesota. The content and goals of the library course are not appreciably different from those of the same course when taught to nondevelopmental students. The differences lie in the way the courses are scheduled, the nature of the final project, and in the attention given to the particular learning needs of high-risk students.

10. Koehler, B. and Swanson, K. (1988). ESL students and bibliographic instruction: learning yet another language.

Research Strategies, 6(4), 148-160

In this article the author describes the development of a four-phase approach to bibliographic instruction in response to the perceived needs of English as a second language (ESL) students at Augsbury College, Minneapolis. Through the use of ability grouping, inclusion of the on-line card catalog, and sensitivity to individual communication problems and learning styles, there was significant improvement in students' basic research skills.

**Survey of Existing Course and Material**

There are a series of literature research guides that are provided in the NYIT library. Those all are printed self-paced guidebooks, they are listed below:

1. Literature Research Guide: Basic Reference Sources
2. Literature Research Guide: Periodical, Essay, and Newspaper indexes
3. Literature Research Guide: Engineering and Technology
4. Literature Research Guide: Labor and Industrial Relations
5. Literature Research Guide: Short Stories
6. Literature Research Guide: Drama and Theater
7. Literature Research Guide: Energy
8. Literature Research Guide: Poetry
9. Literature Research Guide: Hotel/Restaurant Administration and Culinary Arts
10. Literature Research Guide: Careers

These guidebooks assists students in three ways:

1) Major categories of reference materials are identified and their functions are explained.

2) Individual reference works are listed for each category. Classification or call numbers are provided so users may locate them on the shelves.

3) Subject headings are provided for effective use for catalogs, indexes, and other research tools.

There are not hands-on activities going with these guidebooks. So students can't really become familiar with the research skills if they are not under an actual need.

## Plan for Design and Development Effort

The phase following analysis include design, review and eventual implementation. This training program was designed for foreign students, so it will be very basic bibliographic instruction. It was also a practice for those students with library research skills.

### Estimated Student Effort

The estimated students effort for this project was 1.3 hours for each student to complete all of the materials in the learning activities. This included full lesson participation in terms of practical exercises. The lower students can make a request for making examples of the practical exercise to facilitate learning. The maximum student effort of this program was 1.5 hours. If students can't finish this program during the estimated time, they have to take this library instruction program again.

**Project Plan**

The project started in February 1990 and ended with a summative evaluation in May 1990. In planning the project, the designer used both a PERT and Gantt chart. They can be seen in Appendix D. These defined the critical paths of the major events and became the principal control documents for a management-by objective approach to the control of the project progress.

**Budget**

The cost of this project includes the designer's time valued at $20.00 per hour, and materials needed to design and implement the final product. The SME rate of this project was $30.00 per hour. Because this is an experiment training program of bibliographic instruction at NYIT, the librarians and participating students were free. The expenses of the project, when measured against the loss of materials and professional time represents an investment, the return on which will increase as the program is repeatedly used as it is designed to be used. The detailed budget may be seen in Table 3.

## Summary

The analysis indicated that a training need existed because of the gap between the desired and present performance. The target population was identified as foreign students at NYIT. The instruction was determined to be in the cognitive and sychomotor domains. A project plan was developed and the major events were scheduled.

**Table 3**

**Project Budget**

| Expense | Designer Hours | Other Hours | Cost | Subtotal | Total |
|---|---|---|---|---|---|
| Labor | | | | | |
| Analysis | 15 | 0 | $300 | | |
| Design | 30 | 0 | 600 | | |
| Development | 20 | 0 | 400 | | |
| Implementation | 25 | 10 | 700 | | |
| Evaluation | 10 | 10 | 400 | | |
| Total Labor | | | | $2400 | |
| Materials | | | | | |
| Stationary | | | $20 | | |
| Handouts | | | 80 | | |
| Total Materials | | | | $100 | |
| Grand Total | | | | | $2500 |

# CHAPTER 3

# DESIGN

## Introduction

This phase determined the direction and strategy of the training program. The designer conducted a learner analysis that identified the tasks, skills, material, and knowledge needed for NYIT foreign studetns to achieve the instructional goal. The entry level behavior, learning objectives, and test items are developed for this instructional plan. Objectives are grouped and sequenced and related to the learning activity. A measurable result of the learning objectives is provided; as they are stated in performance, conditions, and criteria. The objectives were arranged in a meaningful design, and led to the final stage of design, the instructional plan.

## Instructional Task Analysis

An instructional task analysis is an integral part of the instructional design process. It is an expansion of the job task analysis performance in the analysis stage. When identifying the instructional analysis of a goal, two fundamental steps must be included. The first must classify the goal statement according to the type of learning that will occur. The second is to use information in the procedural analysis to describe exactly what a learner will be doing when the learner performs the goal.

Once the goal is determined, how do you know what skills

must be learned in order to achieve the goal? These skills are the sub-skills for this project. Six main tasks were identified as requirements to accomplish the instructional goal. Eighteen subordinate skills must be mastered to provide for maximum performance. The complete list of tasks can be found in Appendix E.

**Instructional Objectives**

"An objective is a description of a performance you want learners to be able to exhibit before you consider them competent. An objective describes an intended result of instruction, rather than the process of the instruction itself." This definition by Mager (1984, p.3) is the foundation of the instructional analysis. Every objective has three main parts: the conditions of performance, the required performance, and the criteria for judging successful performance.

The performance is a detailed descriptions of what students will be able to do when they complete a unit of instruction. A condition describes the circumstances or stipulations under which the objective will be performed. It might include items such as:

1) Given the COMCAT reader...

2) Given an example of a desired book...

3) Given a case of research...

The final component is the criteria. A proper standard is very important as it provides guidance as to how well the objective must be performed by the learner. The instructional

objectives of six main tasks for this training program were:

1) Given the COMCAT reader, the student will turn it on and operate by moving the vertical and horizontal scans, without error.

2) Given an example of a desired book, the student will distinguish three sections of the catalog record for that book. The students must state the book title, author's last name, and topic without error.

3) Given a case of research, the student will determine the access point for the case and operate the COMCAT to that catalog section, without error.

4) Given an example of a desired book, the student will use COMCAT to search the catalog information in one minute, without error.

5) Given an example of a catalog unit, the student will identify the call number and the other information in the catalog record without error.

6) Given an example of a catalog unit, the student will use the subject heading to find the relevant books. The student must find at least three relevant books in three minutes.

## Entry Behaviors Defined

Entry behaviors are those skills necessary to begin the instruction (Dick and Carey, 1985). Because the target population of this training program are foreign students, the language capability is a very important skill for proceeding in

this program.

The required skills and knowledge the learner must possess in order to perform the instructional goal are as follows:

1) Demonstrate decoding via oral fluency at college level.

2) Demonstrate silent reading comprehension at college level.

3) Demonstrate oral reading comprehension at college level.

4) Demonstrate listening comprehension at college level.

5) Demonstrate the ability to use an English dictionary.

This project was designed for all NYIT foreign students. Therefore, skill and knowledge at the prerequisite level is stipulated for all.

## Group and Sequence Objectives

Tasks should be grounded according to similar skill and knowledge requirements called for by each task. This grouping is performed as a first step towards organizing the structure of this training program. There were six main tasks. These tasks were written in the design stage in sequence.

There were not a lot of tasks in this program and all were in the optimum order. The designer didn't group and sequence objectives when the instruction was conducted.

## Learning Activities Specification

The designer divided this program into six periods for the lessons as six main tasks. Periods one and two were ten minutes.

The third, fourth, and fifth periods were fifteen minutes each. The last period was twenty minutes. Gagne (1985) identified nine internal processes that occur during learning. External support for the internal are the instructional events. These nine instructional events make up a complete lesson plan. The internal process is compared to the instructional event and the lesson plan.

The structure of Gagne's nine steps of instruction was the basis for this lesson plan. Table 4 compares the internal process, the instructional event, and the lesson plan. The media selection consisted of a combination of audio, printed materials, and realia. See Table 5 for this relationship.

## Assessment System Specification

Assessment is an ongoing part of the instruction. There was an English placement test for all the foreign students when they came to NYIT. After conducting the one-on-one interview, the designer understood that those foreign students all were taking different level of English courses in NYIT. The entry behavior survey was conducted.

### Pretest

The pretest is administered at the beginning of instruction to determine a need for instruction. It measures the skills that are going to be taught. A target population analysis survey checklist is shown on Appendix A that developed in the analysis stage was the pretest in this training program. It pointed out

**Table 4**

**Internal Processes, Instructional Events, and the Lesson Plan**

| Internal Process | Instructional Event | Lesson Plan |
|---|---|---|
| 1. Reception | Gaining attention | Gain attention/ motivate |
| 2. Expectancy | Informing learners of objectives | Tell learners what they will be able to do |
| 3. Retrieval to Working Memory | Stimulating recall of prior learning | Relate lesson to previous knowledge |
| 4. Selective Perception | Presenting the stimulus | Present learning activity |
| 5. Semantic Encoding | Providing "learning guidance" | Demonstrate the activity |
| 6. Responding | Eliciting performance | Learner performs the activity |
| 7. Reinforcement | Providing feedback | Give information feedback |
| 8. Retrieval and Reinforcement | Assessing performance | Test verifies learning |
| 9. Retrieval and Generalization | Enhancing retention and transfer | Practice in the reviews |

**Table 5**

**Learning Activity Instructional Strategy Matrix**

| Learning Activity | Content | Instructional Method | Media |
|---|---|---|---|
| 1.0 | Attention/ Reception | lecture/ demonstration | realia |
| 2.0 | Selective Perception | lecture | printed materials |
| 3.0 | Semantic Encoding | question/answer | printed materials |
| 4.0 | Responding | demonstration | printed materials / realia |
| 5.0 | Retrieval | lecture | printed materials |
| 6.0 | Reinforcement | exercise | printed materials/ realia |

the strengths and weaknesses of the learners.

**Post Test**

A post test was used to access the overall performances and competencies of learners. It is a valuable tool, and serves to determine if the stated objectives were learned. This test can

be found in Appendix F.

## Evaluation System Specification

Evaluation tends to be defined as the determination of the effectiveness of a training activity. Two forms of evaluation are formative and summative evaluation. Formative is conducted during the development of the training activity. Summative evaluation measures the outcomes of training; to qualify whether changes have occurred.

### Formative Evaluation

Formative evaluation is the process instructors use to obtain data in order to revise their instruction to make it more efficient and effective (Dick and Carey, 1985). There are three phases in this process. The first is one-on-one evaluation, followed a small group and field trial. For this project, the target population is small in number -- eight, thus the designer selected two individuals in one-to-one, two individuals in small group, and the other four were used in the summative evaluation. The designer didn't use field trial for this program.

### Summative Evluation

The summative evaluation is defined by Dick and Carey (1985), as the design, collection, and purpose of determining the value or worth of that instruction. The summative evaluation enables the designer to determine the effectiveness of the instruction. The four summative evaluation steps according to Kirkpatrick's system of classification are reaction, behavior,

learning, and results (Kirkpatrick, 1987).

### Learning Transfer System Specification

This is a library instruction for foreign students at NYIT. For the learning system, the designer had most control in during instruction strategies. She also incorporated real work as a part of the session in place of case studies in this training program.

### Review and Selection of Existing Materials

During the analysis stage, ten printed guidebooks were cited that were not included as part of the instructional material for this project. However, they provided the designer with relevant facts and methodology in the delivery of the instructional module described in this project.

### Summary

A task analysis was performed in the design stage. Six main tasks and eighteen subordinate skills were necessary for the learner to accomplish the instructional goal. The instructional objectives were stated for each main task.

Entry behaviors were clearly defined. Gagne's nine steps of instruction was the basis of relating internal processes, instructional events, and the lesson plan. The relationship of methods and media to internal processes was identified.

An entry behavior survey, pretest, and post test were tools

for assessment. Formative and summative evaluation were planned.

# CHAPTER 4

# DEVELOPMENT

## Introduction

During the development stage of this project, learning activities were specified. Specification resulting from the design phase are fleshed out in the development phase. The designer developed the instructional materials and strategies. Instructor and learner activities were defined using the task performance measures, learning objectives, and test materials formulated during the design phase. Instructional materials and test items were reviewed to ensure that they are well structured and sequenced.

## Learning Activities Development Scheme

Learning events were developed based on the model used by Dick and Carey (1985). The major components of this strategy are:

1) Preinstructional activities
2) Information presentation
3) Student participation
4) Testing
5) Follow-up activities

## Learning Activity Development

The development of the materials were produced through the

use of a one-on-one interview with those foreign students. The interview was done for each student in the analysis phase of the this training program. The designer asked students questions about their education background. It helped the designer to collect the materials that related to their majors.

Instructional events were sequenced in the order suggested by Gagne (1985) as followed:

1) Gaining attention
2) Informing learners of the objectives
3) Stimulating recall of prior knowledge
4) Presenting the stimulus
5) Providing learning guidance
6) Eliciting performance
7) Providing feedback
8) Assessing performance
9) Enhancing retention and transfer

Items 1, 2, and 3 represent preinstructional activities. Items 4 and 5 represent information presentation. Items 6 and 7 represent student participation. Item 8 represents testing. Item 9 represents follow-up activities. The designer developed the learning events according to these nine steps.

**Preinstructional Activities:**

1) Gaining attention

It was the motivation portion of this training program. A comparison was used as an introduction. The instructor gave two different cases to those foreign students. One was the research

experience of a student who never had any bibliographic instruction before. The other one was that a student with basic research skills can retrieve information in the library quickly and efficiently.

2) Informing learners of the objectives

A brief oral introduction would explain what is COMCAT in NYIT libraries. The library is an extension of the classroom: a resource center of ideas, concepts, and experiences. The COMCAT is a prompt, easy, and effective way to search information that students want in the library. After this bibliographic instruction, the students will be able to use COMCAT to do research in NYIT libraries.

3) Stimulating recall of prior learning

The appearance and location of COMCAT readers would be introduced to the students. The difference between COMCAT and the traditional card catalog would be given to students through lecture. It recalls the experience of using card catalogs in their countries.

**Information Presentation:**

4) Presenting the stimulus

The basic demonstration of the COMCAT reader was conducted to facilitate learning. Students would see how to operate the COMCAT reader. Every part of the reader would be introduced to students through demonstration and lecture.

5) Providing learning guidance

A direction handout of using COMCAT was given to students.

This handout is in Appendix G. It helped those foreign students use COMCAT step by step. In consideration of the foreign students' English listening capability, this printed direction was very necessary and important in providing learning guidance.

**Student Participation:**

6) Eliciting performance

The instructor would guide each student in operation of the COMCAT reader. The procedures of searching were given to students by lecture. The example on the handout was used to be the sample searching case. This example can be found in the Appendix G.

7) Providing feedback

After conducting example searching, the instructor would give the student some basic questions about the three sections of COMCAT. This oral question-and-answer exercise provided more bibliographic knowledge to students.

**Testing:**

8) Assessing performance

A target population analysis survey was used as a pretest checklist in this bibliographic instruction. This pretest can be found in Appendix A. It pointed out the strengths and weakness of students. A post test was conducted to access the overall performance and competencies of the students. This test is in Appendix F.

A practical exercise was given to student at the end of this instruction. This exercise focused on integral research skills

of COMCAT. The material related to their major fields. This exercise materials can be found in Appendix L.

**Follow-up Activities**

9) Enhancing retention and transfer

The students were permitted to keep all the handouts. It can help foreign students to use COMCAT and recall all of the content of this instruction when they come to the library again to do research.

## Learning Activity Review

The designer reviewed all instructional materials for miss-spellings, grammatical errors, punctuation, organization, and style to ensure accuracy and proper use of grammar. The student handouts were also reviewed and carefully looked at to ensure that the students could complete the objectives of the instruction. The reference librarian served as the SME (subject matter expert) in this training program for library technical accuracy. She reviewed all the printed materials for spelling and grammatical errors. She also helped to organize the instructional activities in this training program.

## Material for Evaluation Produced

The use of a fifteen item checklist in target population analysis survey measured the performance of the foreign students in operating skills and applying knowledge of COMCAT. A result of the checklist appears in Appendix C. The oral questioning was

given to students during the instruction to check whether all the students understand the lecture and printed materials. A post test was given to evaluate the psychomotor and cognitive skills and knowledge in this training program.

## Summary

The designer developed instructional materials based on nine major instructional events. Instructional events were sequenced, and materials for evaluation were developed. To ensure accuracy and appropriateness of this bibliographic instruction, the designer and reference librarian reviewed and approved the instructional materials.

# CHAPTER 5

# IMPLEMENTATION

## Introduction

This is the phase where all activities developed in the former ISD phases are put into operation in the library. Instructional delivery and how it was conducted will be addressed. All the materials produced in the development phase were evaluated in order to verify that those foreign students at NYIT have achieved the learning objectives and to detect any problems that may occur. The designer was able to get feedback from the target population. This chapter will also describe the data collection process needed for the summative evaluation.

## Materials for Implementation Reproduced

The student handouts were produced to facilitate learning. This student handouts include:

- How to Use COMCAT
- Filing Rules of COM Catalog
- Guide to the Library of Congress Classification
- Arranging Books by L.C. Call Number
- Library of Congress Classification System

These parts of the final version of the student handout are shown in Appendixes G, H, I, J, and K. The other materials in this bibliographic instruction were a performance checklist (pretest), post test, and exercise worksheets. The pretest and

post test are shown in Appendix A and Appendix F. The exercise worksheets were produced for the different majors of students, including Communication Arts, Computer Science, MBA, Fine Arts, Human Relations, and Hotel Management. Every student was given a copy of the book cover page that is related to their major and a worksheet. This exercise material can be found in Appendix L.

## Instructional Delivery

The designer divided this program into six periods for the lessons as six main tasks. The sequenced and clustered tasks for lessons is shown in Table 6.

**Period 1: ten minutes**

A pretest was delivered to students in Period 1. It is shown in Appendix A. It was a performance checklist of fifteen questions. These questions can measure the skills and knowledge of operating and applying COMCAT. A comparison of two different information searching cases was used to motivate students for this bibliographic instruction. In the lecture presentation, the instructor gave a brief introduction of the COMCAT in this library. The content of this introduction included: the COMCAT lists all the books in all NYIT libraries, the quantity and location of COMCAT in this library, the difference between card catalog and COMCAT, and the advantage and limitation of COMCAT. A demonstration was conducted to operate the COMCAT reader.

**Table 6**

**Sequenced and Clustered for Lessons**

| Subskill Number | Learning Time |
|---|---|
| Period 1 -- Task 1.0<br>1.1, 1.2, 1.3 | 10 minute |
| Period 2 -- Task 2.0<br>2.1, 2.2, 2.3 | 10 minutes |
| Period 3 -- Task 3.0<br>3.1, 3.2, 3.3 | 15 minutes |
| Period 4 -- Task 4.0<br>4.1, 4.2, 4.3 | 15 minutes |
| Period 5 -- Task 5.0<br>5.1, 5.2 | 10 minutes |
| Period 6 -- Task 6.0<br>6.1, 6.2, 6.3 | 20 minutes |

**Period 2: ten minutes**

Most of the foreign students in this training program have had more or less experience using card catalogs before. The instructor stated the three different cataloging information for a book to recall those experiences. The cataloging information are the title of the book, author's name, and a knowledge field. A different catalog section will be used if students have different cataloging information. Several example books were given to students. They would identify the author, title, and subject from these books through the instructor's oral questions.

**Period 3: fifteen minutes**

The COMCAT direction handout was given to students, that can be found in Appendix G. Students would operate the COMCAT reader step by step according to this handout. The instructor explained how to determine the access point in a searching case after she ensured every student could operate the COMCAT without any assistance. The Library of Congress Subject Headings was used to assist in choosing a correct subject heading for an access point. The instructor operated the COMCAT and moved it to the top of the text heading to show the three sections of COMCAT.

**Period 4: fifteen minutes**

An interactive demonstration was used in this section. The instructor must check the vertical scan handle being pulled down at the beginning to operate for each student's demonstration. The alphabetical order of COMCAT was explained to students. Some of the basic filing rules were introduced to students, such as

that COMCAT is alphabetically arranged word-by-word rather than letter-by-letter, hyphenated names are filed after the name in its simple form, definite and indefinite articles (A, An, and The) at the beginning of titles and other headings, are ignored. These filing rules can found in Appendix H.

**Period 5: ten minutes**

After the students found the catalog unit of a given book, the instructor stated that the call number is toward the bottom in a catalog unit. It includes three parts -- classification of L.C., author number, and publication date. A guide to the Library of Congress Classification can be found in Appendix I. "Arranging books by L.C. call number" would help students retrieve books form the exact book shelf. This handout is in Appendix J. A Library of Congress classification system was given to students to be reference that is in Appendix K.

**Period 6: twenty minutes**

An exercise was given to students to practice the skills and knowledge in this bibliographic instruction. The instructor gave a copy of a different book cover page to every student. A worksheet was also given with the cover page. There were two questions on the worksheet, they are in Appendix L. Students should use the subject heading from a catalog unit to find the relevant information. This is the terminal objective of this bibliographic instruction. The Library of Congress Subject Headings was provided to assist them in this exercise.

## Data Collection

Data was collected for the purpose of summative evaluation. The pretest was collected at the start of the instruction. There are twenty multiple choice questions in the post test. It was also administered.

## Summary

The designer delivered the training program as planned. All instructional materials reproduced and distributed during the implementation phase. To deliver this bibliographic instruction, eight students packages were prepared. Each student package included the following: 1) pretest, 2) post test, 3) exercise worksheet, and 4) student handout. The instructional process was described. Collection of information was being compiled as the training activity was being conducted.

# CHAPTER 6

# EVALUATION

## Introduction

Evaluation is the process of assessing the value of this training program. It would determine its effectiveness in carrying out the objectives, and it aided in improving the training. It helps to decide whether the training should be continued. This format was a useful tool to check trainees' reactions toward the training program.

Evaluation is a continuous process, although the formal evaluation stage came as a final step in the design of the module. The designer conducted both formative and summative evaluations. As a matter of information, the systematic approach allows for the continual monitoring, adjusting, or correcting of weak areas.

## Formative Evaluation

Formative evaluation is defined by Dick and Carey (1985) as, "The collection of data and information during the development of instruction which can be used to improve the effectiveness of the instruction." (p.197) This may consist of trying out the instruction in one-on-one, small group, or field trial situations before using it on the target population. The designer chose the first two phases to evaluate this project in modifying the instruction material.

**One-on-one Trials**

This evaluation is conducted with one student at a time. The purpose is to identify and remove obvious errors in this library instruction, and also to get initial feedback from the target population. Three students were selected from the target population. The designer worked with them individually. The designer presented the material and evaluated the training process with them. This gave the designer the students' immediate reaction to the material. The student was encouraged to tell the instructor when any difficulty was encountered.

Student 1 is 24, female, and she is a freshman in Communication Arts. She asked whether she can use COMCAT to search the articles in periodicals. It helped the designer to revise the content of lecture. The designer would add the introduction of the other NYIT catalogs in the material.

Student 2 is 27, male, and a major in Computer Science at NYIT. When he was operating the COMCAT reader, he felt the text on screen was not clear to read. The designer revised the sequence of material so that the use of the focus wheel on the COMCAT reader would be explained to the students at the beginning of the demonstration.

**Small Group Trials**

The small group evaluation continues to refine the training program while including a broad sampling of the target population. This helps the designer to see the instruction on a similar population but in a group situation. It also allows the

designer to see if the changes made after the one-on-one were effective, and possibly find any additional errors or problem areas.

Students with two different majors participated in this small group trial. The designer used the revised material and conducted a training program. These foreign students participated actively. They went through the whole training process. In summary, they did not report encountering any particular difficulty. No further changes were suggested by them.

**Pilot Test**

This is identical to the final stage of formative evaluation -- field trial. The instructor attempts to use a learning situation that closely resembles that intended for the ultimate use of the instructional material in this stage (Dick and Carey, 1985).

The instruction will include all the changes and corrections that were made from the previous evaluations. This will determine its effectiveness under similar conditions. After these results are acted on, the problem is ready for the entire target population. But there were only four students available for formative evaluation of this training program, the designer did not use this stage in the formative evaluation.

## Summative Evaluation

The summative evaluation is a method of determining the

effectiveness of a program. Kirkpatrick (1987) divides evaluation into four levels: reaction, learning, behavior, and results.

**Reaction**

Reaction is defined as what the trainees thought of this training program, including materials, instructors, facilities, methodology, and content. It gauges the feelings of the students but does not determine whether or not they actually learned from the COMCAT instruction. A questionnaire was developed to see how the students liked this training program. The questionnaire was distributed at the end of the instruction. This evaluation questionnaire form is shown in Appendix M.

According to the data collected from the questionnaire, the designer created a table to illustrate the reaction results. This is shown on Table 7. In short, students showed their positive feelings toward this training program.

**Learning**

The second level is to measure the students' achievement during the instruction. It concerns the measurement of the learning principles, facts, techniques, and skills presented in this bibliographic instruction. The comparison of pretest, post tests, and exercise results can indicate whether knowledge was gained and attitudes were changed. This comparison is shown on Table 8. The pretest is in Appendix A. The post test is included in Appendix F. The exercise sheet is in Appendix L.

**Table 7**

**Results of the Reaction Evaluation**

n=4

| Question | Strongly Agree | Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|
| No. 1 | 3 | 1 | 0 | 0 |
| No. 2 | 4 | 0 | 0 | 0 |
| No. 3 | 4 | 0 | 0 | 0 |
| No. 4 | 4 | 0 | 0 | 0 |
| No. 5 | 3 | 1 | 0 | 0 |
| No. 6 | 4 | 0 | 0 | 0 |
| No. 7 | 3 | 1 | 0 | 0 |
| No. 8 | 4 | 0 | 0 | 0 |
| No. 9 | 2 | 2 | 0 | 0 |
| No. 10 | 3 | 1 | 0 | 0 |

**Behavior**

The behavior level is to justify any behavioral change that has been taken after the training. It requires a desire to change and use the material learned by creating the proper climate for use of the instruction. Because this is not organizational training, the designer didn't conduct this level of evaluation.

**Table 8**

**Comparison of Pretest, Post Test, and Exercise Results**

| Student | Pretest | Post Test | Exercise |
|---|---|---|---|
| 5 | 47 | 95 | 100 |
| 6 | 47 | 90 | 90 |
| 7 | 33 | 85 | 100 |
| 8 | 60 | 95 | 100 |

**Results**

Evaluations at this level are used to relate the results of the program to organizational improvement. It may involve improved cost saving, productivity, and quality changes. The designer didn't conduct this level of evaluation because of time constraints and impracticality of actual follow-up.

## Learning Transfer

Broad (1982) states that the transfer of learning behavior can improve performance in the current job. It seems that the working enviornment receives the least amount of attention and holds the greatest resources for ensuring the transfer of learning. Therefore, by knowing more about the working enviornment, this module will better assist the design of instruction. In a research study Broad completed, she identified five actions that management can take to support the transfer of

training to the job. They are:

1) Upper management involvement
2) Pretraining preparation
3) Support during training
4) Job linkage
5) Follow-up

The first category of action involves top level management. Their actions should ideally include participation in training, allocation of resources and incorporation of training outcomes into the organizational structure. Pretraining preparation includes actions by managers and supervisors of the trainees. They should become active participants in the instructional design and development. Support during training is given by managers and supervisors to maintain the ties between the trainees and the job during the training program. Job linkage is the category in which managers and supervisors facilitate the reentry of the trainee into the workplace. Follow-up includes the actions and instructional strategies of management and supervisors that reinforce the skills acquired during the training. According to Broad's study, the job linkage and follow-up categories occur much more frequently than the other three.

The transfer of learning from the instructional setting to the workplace can be as variable as work and the corporate environment tend to be. This training program did not take place in an industrial organization. The designer considered the

transfer of learning events that students can apply the skills and knowledge from this instruction to do a library research when they come to the library again.

A number of transfer enhancement strategies can be implemented before instruction, during the organized learning experience, and after the learners have returned to the work environment (Beaudin, 1987). In this library training program, the designer had most control during the learning event. So she conducted an interview and needs analysis survey to practice and feedback need to be an integral part of learning. She also incorporated a practical exercise as part of the session in place of case study.

**Summary**

The designer conducted formative and summative evaluations to determine the effectiveness and the continuation of the training program. The result of the formative evaluation indicated that the instructional program fulfilled the objectives. The content was relevant and concise. After conducting one-on-one trials, several minor changes were made to improve the effectiveness in small group trial. The summative evaluation indicated the students' reaction and their learning achievement to this instruction.

All the students agreed or strongly agreed that this was a clear, appropriate, and helpful training program. They showed a positive attitude toward the training program. The students'

pretest were all below 61 percent. They gained over 85 percent in the post test.

# CHAPTER 7

# SUMMARY AND RECOMMENDATIONS

## Introduction

In this concluding chapter the contents of the entire document will be summarized. It reviews the methods the designer used in creating this document and possible recommendations that pertain to this library instructional program. This final phase will give suggestions to anyone who uses the module, or wishes to extend the program to other educational areas or subjects.

## Methods and Procedures Used

The method used in this project was based upon the ISD (Instructional Systems Design) approach. This module consisted of five components: analysis, design, development, implementation, and evaluation.

### Analysis

This stage required the designer to conduct a needs analysis, which involves defining the needs and the target population who must be trained. To establish this information, the designer performed a job task analysis, as well as a review of the methods, courses, and available literature. The needs of the target population were arrived at from a survey checklist.

An instructional program was planned to be a combination of lecture, printed material, exercise, and demonstration. A plan was established using PERT and Gantt charts. A budget was

prepared showing the cost of implementing this program.

**Design**

During the design stage the designer conducted a task analysis. The six main tasks then became the six instructional objectives. The designer arranged those objectives in a specific sequence to facilitate learning. Entry behaviors were defined for the students. Printed materials were designed and a lesson plan format developed. A plan for formative evaluation was formulated.

**Development**

The lesson plan was developed using Gagne's nine instructional events. The attitude component of the training was addressed in part by a series of preinstructional activities that included a brief lecture to gain students' attention and recall their prior learning experience.

The method of presentation was set. It would combine an instructor-presented lecture, printed material, exercise, and the COMCAT reader demonstration. The tests and follow-up activities were developed to improve the instructional module.

**Implementation**

The program was implemented with the target population. The instruction was given in eighty minutes in the reference room of Central Islip Library. The required printed material were distributed.

Conduct of the instructional delivery was addressed. All the materials produced in the development phase were evaluated in

order to verify that those foreign students at NYIT have achieved the instructional objectives, and to detect any problems that may have occurred. Data was collected for the evaluation phase.

**Evaluation**

The designer conducted formative and summative evaluations. The formative evaluation was conducted during the development phase of this instructional program. At first, one-on-one trials were conducted to establish any learning deficiencies that existed. A small group trial was then conducted after making some revisions in the training process.

The summative evaluation was then used to evaluate the validity of the material through Kirkpatrick's four criteria: reaction, learning, behavior, and results. The effect of the material was measured though a post test and a practical exercise at the end of the instruction. All the students passed the test and met the criteria. Overall, the training module was considered a success.

## Conclusions

The one-on-one and small group evaluations provided were very useful and helped validate the results. It indicated that the students enjoyed the instruction and considered the course useful. Their use of the material since this initial bibliographic course indicated that they are using the instruction to improve the research skill in using libraries.

The designer has also concluded that evaluation is a never-

ending process. Each time instruction is presented some new and often excellent suggestions are made to improve the program.

## Recommendations

The designer recommends that several possible uses of the concepts and skills presented in this project be acted on as follows:

1. If NYIT libraries use the on-line catalog in the future, This bibliographic instruction should be put in the computer as a CAI training program to guide students how to use the on-line catalog.

2. This bibliographic training program can be used in the NYIT new student orientation each semester.

3. The instructional setting was Central Islip Campus Library. The other two campus of NYIT also can use this program in their libraries because the materials designed are applicable to all the NYIT libraries.

4. The reference librarians in NYIT libraries can design the other library instruction at higher level to meet students' different and further library research needs.

## Concluding Statement

The designer has worked in her university library in Taiwan and conducted a similar library orientation instruction for college students. She is a foreign student at NYIT too, so she knows what library research skills those students lack. This

bibliographic instruction did apply the knowledge that she learned in her Library Science bachelor degree. She was also the instructor in this training program.

The evaluations indicated that those foreign students enjoyed the instruction and considered the course useful. It can help them to do the library research efficiently.

# APPENDIX A

## PRETEST

**Appendix A**

**Target Population Analysis Survey**

**(Pretest)**

Check the following skills you have of using the COMCAT.

Yes No

___ ___ 1. Indicate the location of COMCAT in this library.

___ ___ 2. Turn on the reader of COMCAT.

___ ___ 3. Pull the vertical scan down.

___ ___ 4. Use the horizontal scan to choose which section you want to search.

___ ___ 5. Recognize the heading of a catalog unit.

___ ___ 6. Move the horizontal scan right or left for the alphabetical arrangement.

___ ___ 7. Pull the vertical scan up to search the accurate heading of catalog.

___ ___ 8. Use the focus wheel to adjust the picture and make it clear.

___ ___ 9. Understand most catalogs are either in dictionary format or divided.

___ ___ 10. Identify the major features of a divided catalog.

___ ___ 11. Understand the basic filing rules peculiar to the author, title, and subject catalogs.

___ ___ 12. Recognize the author, title, and subject on a catalog unit.

___ ___ 13. Identify the other information that is found on a catalog unit.

___ ___ 14. Identify the call number on a catalog unit and distinguish three parts of it.

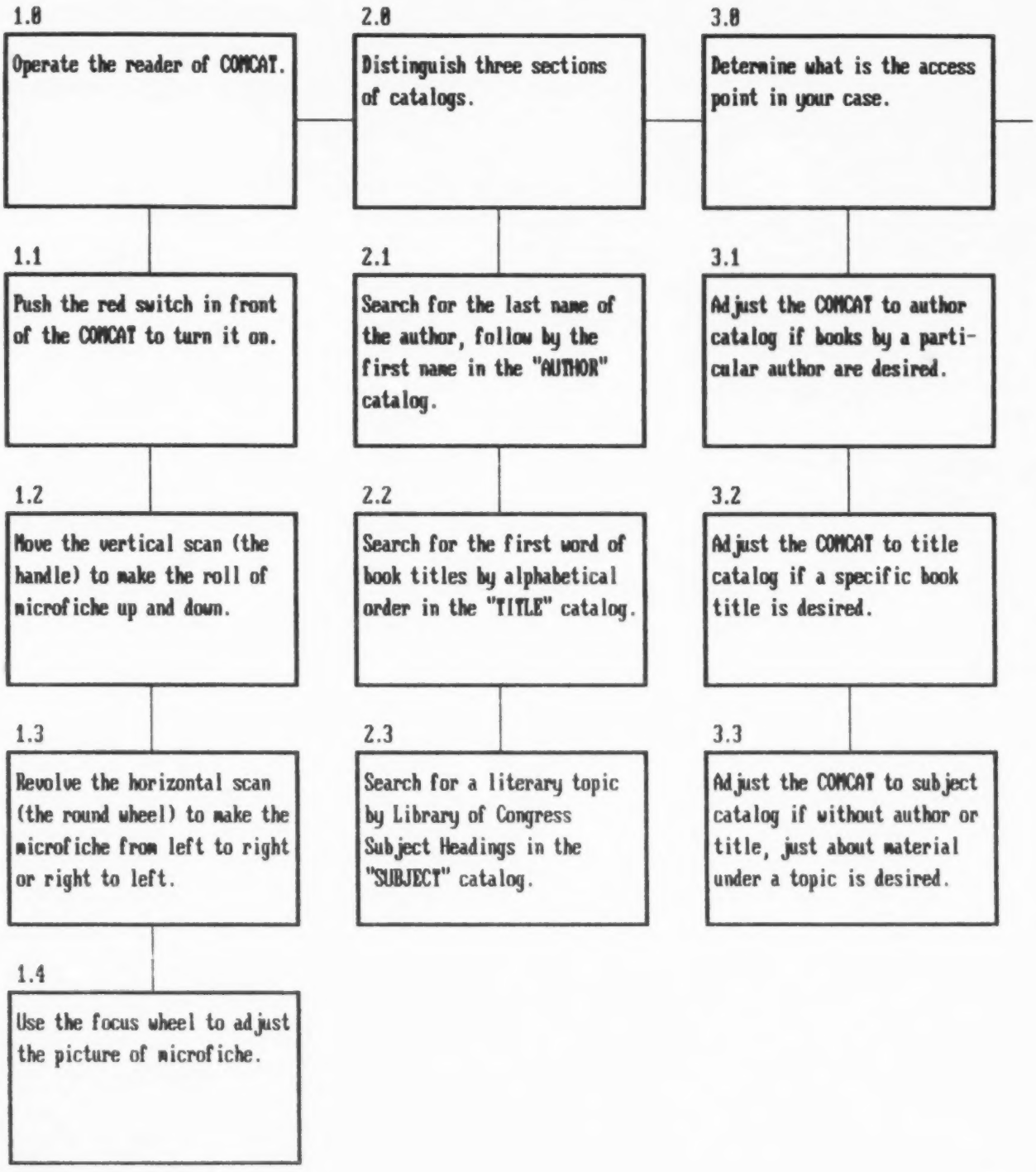
___ ___ 15. Search the subject catalog with the help of the Library of Congress Subject Headings.

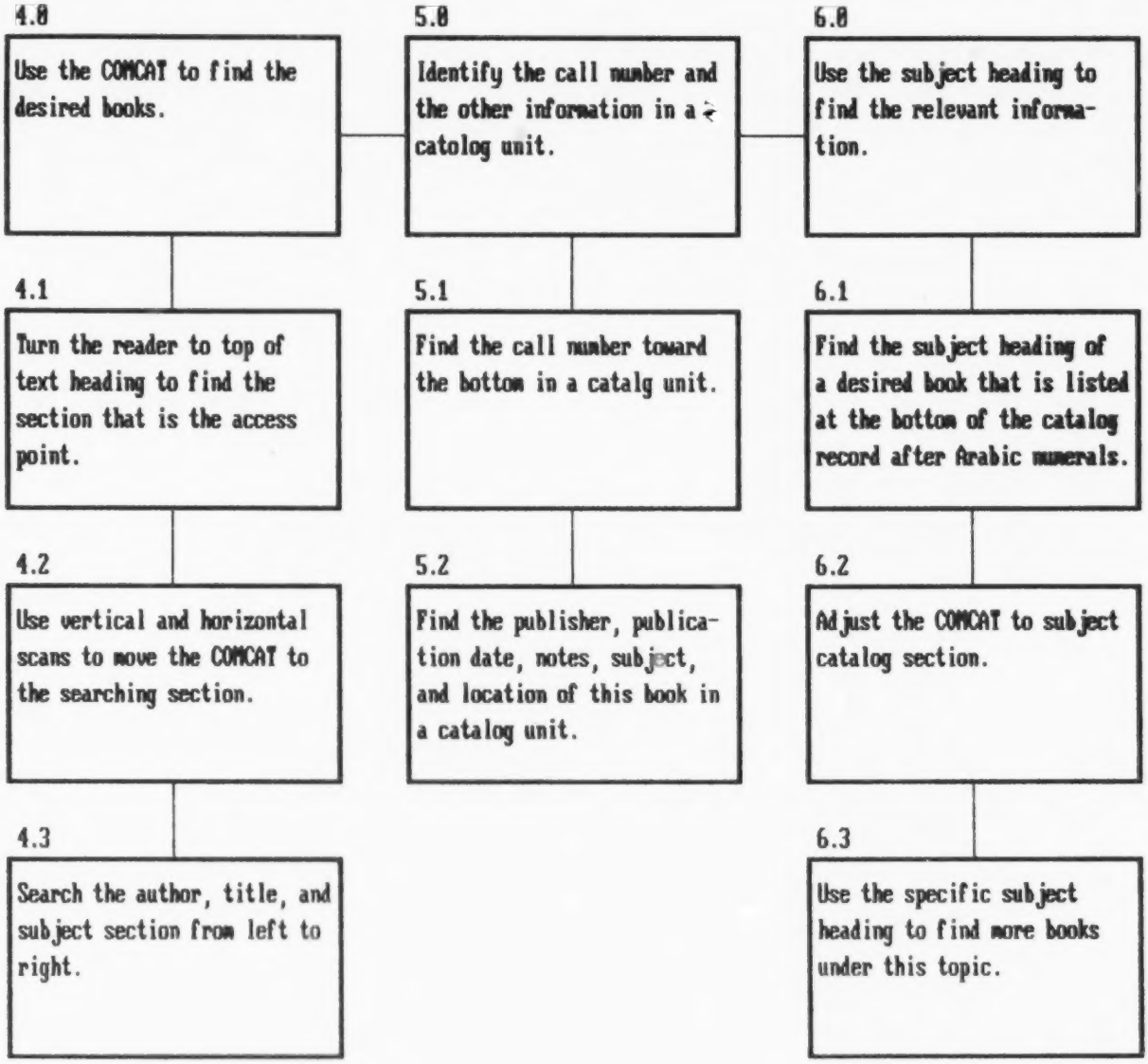
# APPENDIX B

## HIERARCHICAL ANALYSIS OF TASKS AND SUBSKILL

# Appendix B

## Hierarchical Analysis of Tasks and Subskills


1.0
Operate the reader of COMCAT.
2.0
Distinguish three sections of catalogs.
3.0
Determine what is the access point in your case.
1.1
Push the red switch in front of the COMCAT to turn it on.
2.1
Search for the last name of the author, follow by the first name in the "AUTHOR" catalog.
3.1
Adjust the COMCAT to author catalog if books by a particular author are desired.
1.2
Move the vertical scan (the handle) to make the roll of microfiche up and down.
2.2
Search for the first word of book titles by alphabetical order in the "TITLE" catalog.
3.2
Adjust the COMCAT to title catalog if a specific book title is desired.
1.3
Revolve the horizontal scan (the round wheel) to make the microfiche from left to right or right to left.
2.3
Search for a literary topic by Library of Congress Subject Headings in the "SUBJECT" catalog.
3.3
Adjust the COMCAT to subject catalog if without author or title, just about material under a topic is desired.
1.4
Use the focus wheel to adjust the picture of microfiche.


4.0
Use the COMCAT to find the desired books.
4.1
Turn the reader to top of text heading to find the section that is the access point.
4.2
Use vertical and horizontal scans to move the COMCAT to the searching section.
4.3
Search the author, title, and subject section from left to right.
5.0
Identify the call number and the other information in a catolog unit.
5.1
Find the call number toward the bottom in a catalg unit.
5.2
Find the publisher, publication date, notes, subject, and location of this book in a catalog unit.
6.0
Use the subject heading to find the relevant information.
6.1
Find the subject heading of a desired book that is listed at the bottom of the catalog record after Arabic numerals.
6.2
Adjust the COMCAT to subject catalog section.
6.3
Use the specific subject heading to find more books under this topic.

# APPENDIX C

# TARGET POPULATION SURVEY RESULTS

## Appendix C

## Target Population Survey Results

Check the following skills you have of using the COMCAT.

| Yes | No | |
|---|---|---|
| 7 | 1 | 1. Indicate the location of COMCAT in this library. |
| 7 | 1 | 2. Turn on the reader of COMCAT. |
| 6 | 2 | 3. Pull the vertical scan down. |
| 5 | 3 | 4. Use the horizontal scan to choose which section you want to search. |
| 4 | 4 | 5. Recognize the heading of a catalog unit. |
| 5 | 3 | 6. Move the horizontal scan right or left for the alphabetical arrangement. |
| 5 | 3 | 7. Pull the vertical scan up to search the accurate heading of catalog. |
| 3 | 5 | 8. Use the focus wheel to adjust the picture and make it clear. |
| 4 | 4 | 9. Understand most catalogs are either in dictionary format or divided. |
| 2 | 6 | 10. Identify the major features of a divided catalog. |
| 0 | 8 | 11. Understand the basic filing rules peculiar to the author, title, and subject catalogs. |
| 5 | 3 | 12. Recognize the author, title, and subject on a catalog unit. |
| 2 | 6 | 13. Identify the other information that is found on a catalog unit. |
| 1 | 7 | 14. Identify the call number on a catalog unit and |

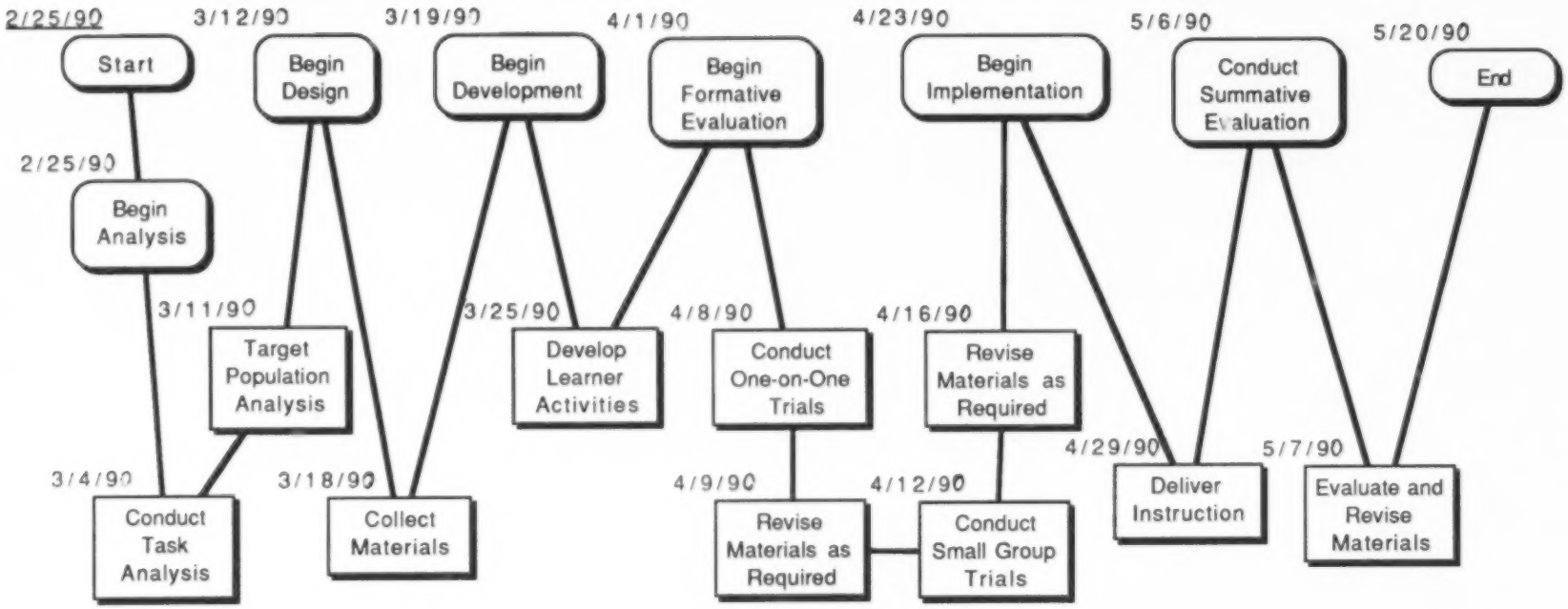
distinguish three parts of it.

c 8 15. Search the subject catalog with the help of the Library of Congress Subject Headings.

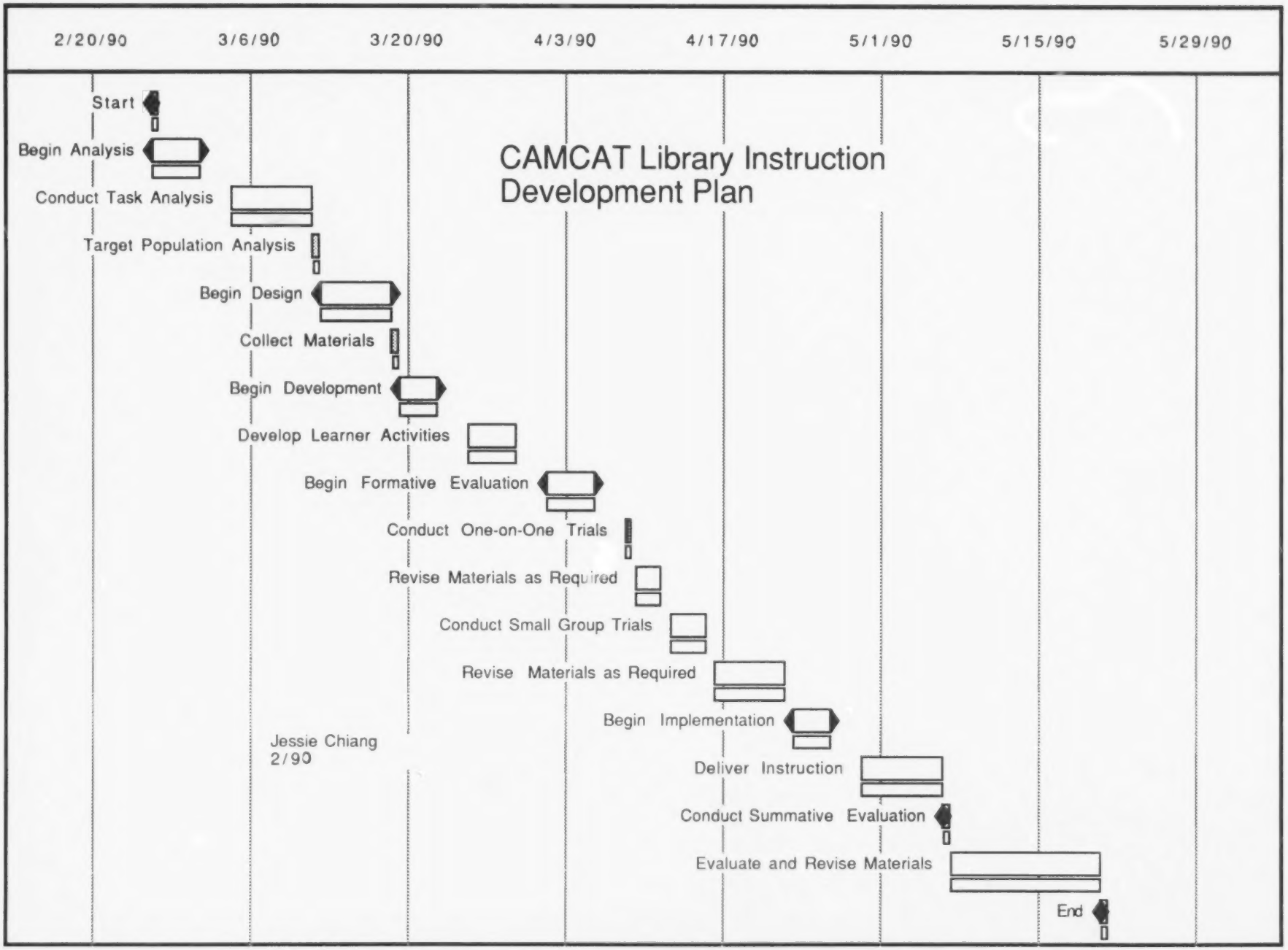
# APPENDIX D

# PROJECT PLAN

# COMCAT Library Instruction Development Plan




Jessie Chiang
2/90


2/20/90
3/6/90
3/20/90
4/3/90
4/17/90
5/1/90
5/15/90
5/29/90
CAMCAT Library Instruction
Development Plan
Start
Begin Analysis
Conduct Task Analysis
Target Population Analysis
Begin Design
Collect Materials
Begin Development
Develop Learner Activities
Begin Formative Evaluation
Conduct One-on-One Trials
Revise Materials as Required
Conduct Small Group Trials
Revise Materials as Required
Begin Implementation
Deliver Instruction
Conduct Summative Evaluation
Evaluate and Revise Materials
End
Jessie Chiang
2/90

# APPENDIX E

## LIST OF MAIN TASKS AND SUBSKILLS

## Appendix E

## List of Main Tasks and Subskills

1.0 Operate the reader of COMCAT.

- 1.1 Push the red switch in front of the COMCAT to turn it on.
- 1.2 Move the vertical scan (the handle) to make the roll of microfiche up and down.
- 1.3 Revolve the horizontal scan (the round wheel) to make the microfiche from left to right or right to left.
- 1.4 Use the focus wheel to adjust the picture.

2.0 Distinguish three sections of catalogs.

- 2.1 Search for the last name of the author, follow by the first name in the "AUTHOR" catalog.
- 2.2 Search for the first word of book titles by alphabetical order in the "TITLE" catalog.
- 2.3 Search for a literary topic by Library of Congress Subject Headings in the "SUBJECT" catalog.

3.0 Determine what is the access point in your case.

- 3.1 Adjust the COMCAT to author catalog if books by a particular author are desired.
- 3.2 Adjust the COMCAT to title catalog if a specific book title is desired.
- 3.3 Adjust the COMCAT to subject catalog if without author or title, just about material under a specific topic is desired.

4.0 Use the COMCAT to find the desired books.

4.1 Turn the reader to top of text heading to find the section that is the access point.

4.2 Use vertical and horizontal scans to move the COMCAT to the searching section.

4.3 Search the author, title, and subject section from left to right.

5.0 Identify the call number and the other information in a catalog unit.

5.1 Find the call number toward the bottom in a catalog unit.

5.2 Find the publisher, publication date, notes, subject, and location of this book in a catalog unit.

6.0 Use the subject heading to find the relevant information.

6.1 Find the subject heading of a desired book that is listed at the bottom of the catalog record after Arabic numerals.

6.2 Adjust the COMCAT to subject catalog section.

6.3 Use the specific subject heading to find more books under this topic.

**APPENDIX F**

**POST TEST**

**Appendix F**

**Post Test**

SKILL: Knowing the physical arrangement of materials and service

____1. The books and media in our library are shelved by

A. author.

B. Dewey Decimal classification scheme.

C. Library of Congress classification scheme.

D. title.

SKILL: Knowing how to choose appropriate subject headings for researching a given topic

____2. A. helps you choose terms to use in the public catalog.

B. lists only subject headings used in our library's public catalog.

C. does not identify subjects related to your topic.

D. lists books in our library by subject.

SKILL: Locating resources by searching under title, author, or subject in the COMCAT

Use this sample catalog citation to answer questions 3-9

(A) Industrial management

(B) Drucker, Peter Ferdinand, 1909-

(C) The frontiers of management : where tomorrow's decisions are being shaped today / Peter F. Drucker. 1st ed. New York : Truman Talley Books,

c1986

xi, 368p. ; 25cm. [13455574]

Includes index

(D) 1. Management I. Title

HD31. D7713

New York copy 1

Central Islip copy 2

____3. The title of the item identified on the catalog unit shown above is given in the section labeled:

A. B. C. D.

____4. The author of the item identified on the catalog unit shown above is given in the section labeled:

A. B. C. D.

____5. This catalog unit would be filed in COMCAT under the subject heading given in the section labeled:

A. B. C. D.

SKILL: Interpreting the bibliographic information found in the COMCAT

____6. The call number for this item is given in the section labeled:

A. B. C. D.

____7. The publication date of this item is given in the section labeled:

A. B. C. D.

____8. The number of pages for this item is given in the section labeled:

A. B. C. D.

____9. The other subject headings for this item are listed in the section labeled:

A. B. C. D.

SKILL: Using appropriate periodical indexes, abstracts, or subject bibliographies for a given topic

____10. An abstract is

A. a summary of the key concepts of an article of a book.

B. a list of related articles of books.

C. a general introduction to a topic.

D. a list of related subjects and sources.

____11. To find a list of books and other materials on your subject, you would consult a/an

A. dictionary.

B. encyclopedia article.

C. bibliography.

D. appendix

____12. To find the most current information on your topic you would consult

A. rare books.

B. periodical articles.

C. encyclopedia articles.

D. bibliographies.

____13. Entries in periodical indexes are usually arranged by the

A. author of the article.

B. title of the article.

C. title of the periodical.

D. subject of the article.

____14. You would consult an abstract of an article

A. to find out more about that article.

B. when the library does not have a copy of the article.

C. to determine if you need to read the entire article.

D. all of the above.

SKILL: Understanding the library's call number system enough to retrieve materials from the shelves

Using these sample call numbers, answer questions 15-16

(1) P29.C25 (2) P29.L891 (3)PB41.299M6

(4) PC1640.C33 (5) PE1625.A54 (6) PE1625.C43

____15. A book with call number PE1625.C29 would be placed on the shelf

A. between (3) and (4).

B. between (4) and (5).

C. between (5) and (6).

D. after (6).

____16. A book with the call number PC3295.495 would be place on the shelf

A. between (1) and (2).

B. between (2) and (3).

C. between (3) and (4).

D. between (4) and (5).

SKILL: Interpreting the bibliographic information found in the

COMCAT

____17. To find general information on a topic with which you are not familiar, consult a/an

A. encyclopedia.

B. dictionary.

C. reader's guide.

D. almanac.

____18. To find a book on the life of Ernest Hemingway, you would look

A. under his name in the author/title catalog.

B. in a biography of American authors.

C. in a periodical index.

D. under his name in the subject heading.

____19. A collection of useful facts, statistics, records, etc. published on a regular basis in the volume is called:

A. encyclopedia.

B. dictionary.

C. directory.

D. almanac.

____20. A list of related books, articles, etc. found either as a separately published list or at the end of an article or book is called a/an:

A. biography.

B. glossary.

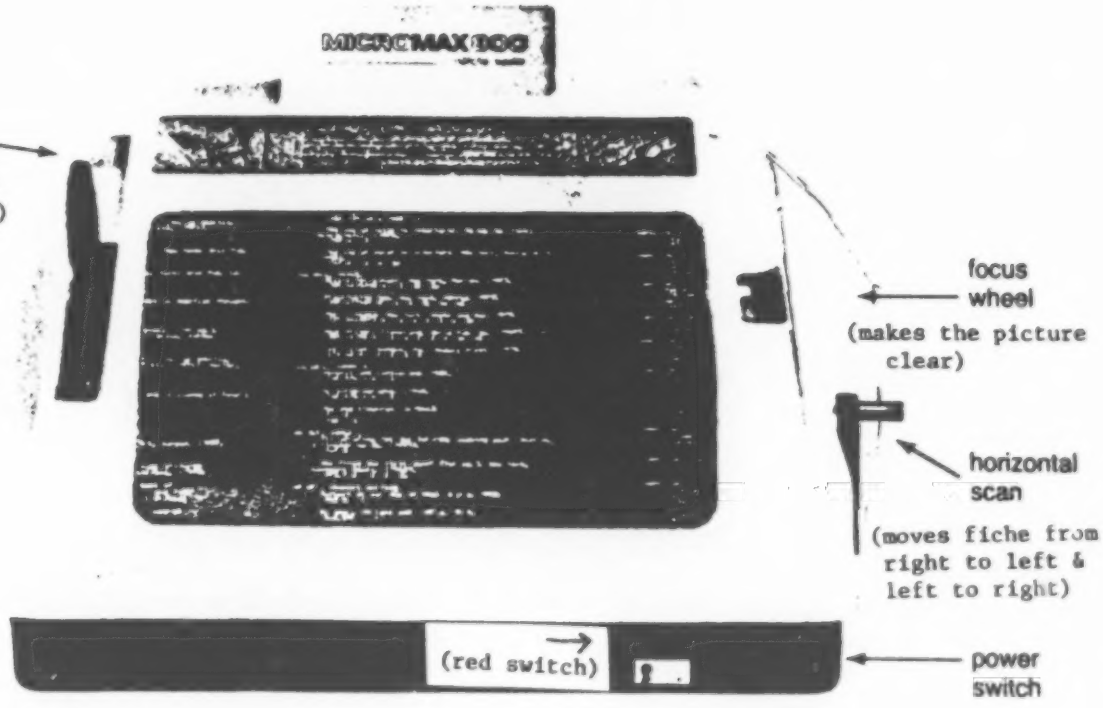
C. bibliography.

D. appendix.

# APPENDIX G

# HOW TO USE COMCAT

# CONTROLS




1. Please sit in front of the COMCAT.
2. Push the red switch in front of the COMCAT. This turns the machine on.
3. The handle on the left side (vertical scan) moves the roll of microfiche,that is inside the machine, up and down.
4. The round wheel (horizontal scan) is on the right side of the COMCAT. This moves the fiche from left to right or right to left.
5. The smaller wheel on the top right is the focus wheel. This adjusts the picture to make it clear.

NOW YOU ARE READY TO USE THE COMCAT!

1. The COMCAT lists all of the books in all the NYIT libraries.
2. The COMCAT is divided into 3 parts or sections. These are AUTHOR, TITLE, SUBJECT The listings are in alphabetical order.
3. After turning on the COMCAT, pull the handle on the left (vertical scan) down.
4. Look at the top of the column. It will read AUTHOR, TITLE or SUBJECT. Then you can see what section you are in.
5. If you are looking for a special author, you should be in the AUTHOR section.
6. The TITLE section lists all books alphabetically by title.
7. Use the SUBJECT section to find information about a particular subject. Student use the SUBJECT section most of the time. SUBJECT HEADINGS are <u>always</u> in c
8. Let's look under the subject heading ALCOHOLISM. There are many books about this subject. They are listed in alphabetical order by AUTHOR.
9. This is an example of a book listing or citation.

Author → Madden, J. S. (John Spencer)
Title → A guide to alcohol and drug dependence/ J.S. Madden; with a foreword by Griffith Edwards. 2nd ed. Bristol: J. Wright, 1984. X11, 288 p.; 22 cm [12480243]
Previou ed.: 1979.
Includes bibliographies and index.
1. Drug abuse. I. Title.
Call number → HV5035 .M33 1984
Old Westbury copy 1
New York copy 2
Central Islip copy 3

10. The author, title, publisher and date of publication are given. The CALL NUMBER is toward the bottom. College libraries , such as NYIT, use the L.C. (Library of Congress) classification system.
11. Under the CALL NUMBER you can see the library or libraries that have this book.

Old Westbury has copy 1
New York has copy 2
Central Islip has copy 3

Copy numbers 2 or 3 do not mean branch has 2 or 3 copies; branch owns copy 2 or copy 3.

12. Write down the CALL NUMBER and see if you can find this book. Books are on the shelf in call number order by letter and number.

* IF AT ANY TIME YOU NEED HELP, PLEASE ASK A LIBRARY STAFF MEMBER TO ASSIST YOU.

# USING THE COM (Computer Output Microform) CATALOG

Each COM Catalog contains the complete book and faculty publication holdings of all NYIT branch libraries. New periodicals and periodical indexes added to the collection since 1983 are also listed in the COM Catalog.

## COM Catalog Contents

Each COM Catalog (COMCAT) is divided into the following sections:

1. AUTHORS - Last names are listed first
   - "Mc" is filed as "Mac"
2. TITLES - Filed by first word except if they begin with "a", "an", or "the"
   - All titles beginning with numerals are filed after titles starting with words
3. SUBJECTS

## Other Catalogs

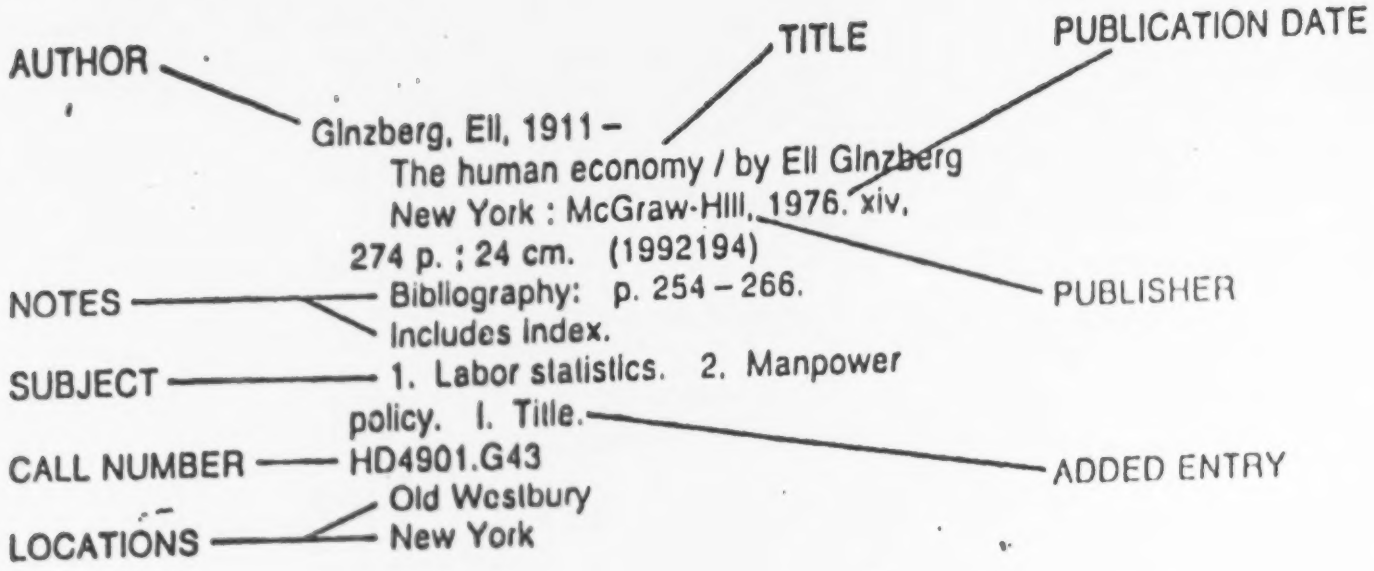
The complete holdings of library materials in nonbook format are listed in Card Catalogs placed on top of the microfilm cabinets located left of the COM Catalogs as you enter the library:

1. Periodicals (magazines, journals, etc.)
2. Vertical File (pamphlets, reports, etc.)
3. Annual Reports (issued mainly by corporations, government agencies, etc.)
4. NYIT Theses (Masters' degree level)

In addition to the materials listed above, there is also a Card Catalog for Best Sellers, a collection of popular books shelved near the Reference Desk.

A listing of Indexes and Abstracts (subject guides to periodical literature) and a floor plan showing their location are posted on the wall near the Reference Desk.

***If you have any further questions, ask a Reference Librarian!!!


AUTHOR
TITLE
PUBLICATION DATE
Ginzberg, Eli, 1911 –
The human economy / by Eli Ginzberg
New York : McGraw-Hill, 1976. xiv,
274 p. ; 24 cm. (1992194)
NOTES
Bibliography: p. 254 – 266.
PUBLISHER
Includes index.
SUBJECT
1. Labor statistics. 2. Manpower
policy. I. Title.
CALL NUMBER
HD4901.G43
ADDED ENTRY
LOCATIONS
Old Westbury
New York

# APPENDIX H

# FILING RULES

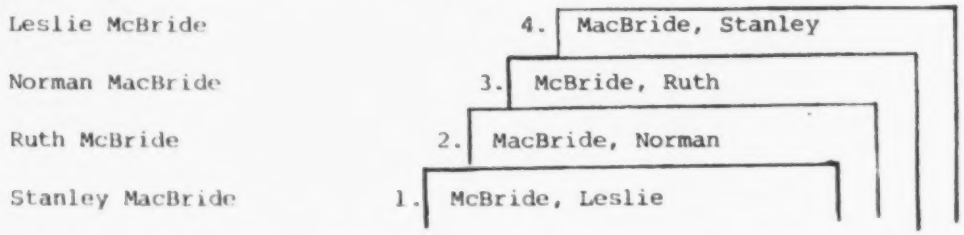
Filing Rules:

1. All catalog cards are alphabetically arranged word-by-word rather than letter-by-letter.

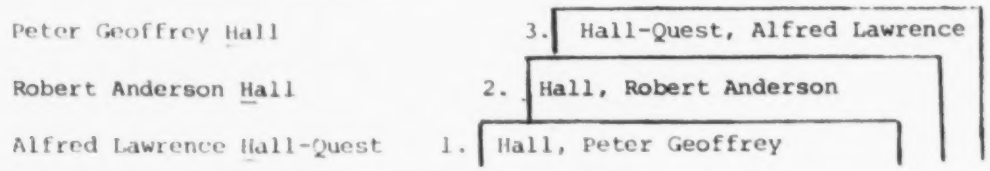
| Word-by-word | Letter-by-Letter |
|---|---|
| Education | Education |
| Education Service Centers | Educational Administration |
| Educational Administration | Education Service Centers |
| Mary Anne Green | Mary Anne Green |
| Mary Jean Green | Maryanne Green |
| Maryanne Green | Mary Jean Green |
| New York | Newfoundland |
| Newfoundland | New York |

2. Author Catalog

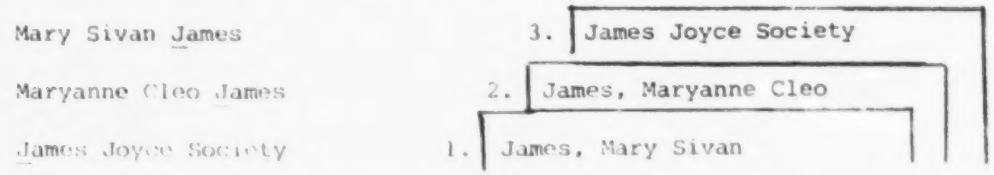
a. Names beginning with "Mc" are interfiled with names beginning "Mac" as if all were spelled "Mac". Examples:




b. Hyphenated names are filed after the name in its simple form. Examples:




c. Corporate authors are filed after personal authors. Examples:




d. Place names as authors are filed in the following order: place name alone, place name followed by parenthetical qualifier, i.e., (City) in 1. below; place name in a phrase.

Examples:
1. New York (City).
2. New York (City). Charters
3. New York (City). Museum of Modern Art
4. New York (City). Youth Board
5. New York (State). Dept. of Commerce
6. New York (State). Laws, Statutes, etc.
7. New York (State). State University, Buffalo
8. New York (State). University
9. New York African Studies Association
10. New York City - Pratt Institute
11. New York State Historical Association



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3. Title Catalog

a. Definite and indefinite articles (A, An, The) at the beginning of titles and other headings, are ignored. For example: The Grapes of Wrath is filed under Grapes of Wrath.

b. Numbers and abbreviations are filed as though spelled out. For example, Mr. is filed as mister, Dr. as doctor, St. as saint. Numbers in title are filed as spelled out, dates as pronounced, 100 American Poems is filed as One Hundred American Poems, 1066 is filed as ten sixty-six.

Examples:
1. Mr. Blandings builds his dream house.
2. Mister Ed, the talking horse.
3. St. Joan of Arc.
4. Saint John the Divine.
5. 1776, a musical play.
6. The seventeenth century.
7. $70 billion in the bank.
8. Seventy-five years of modern architecture.
9. Seventy-four writers of the colonial south.
10. Seventy letters
11. 73 poems.

4. Subject Card Catalog

a. The index to the terms used in the Subject Catalog is the Library of Congress Subject Headings located in the main card catalog room (see sample p. 16). In addition to being able to find what terms are actually used, one can get a better overview of the alphabetical filing system used.

b. The Subject catalog is filed alphabetically by major subject headings. These major topics may be subdivided chronologically, topically, and geographically, in that order. Following this are filed inverted subjects, followed by parenthetical qualifiers.

Examples:
DRAMA
DRAMA--15th AND 16th CENTURIES
DRAMA--19th CENTURY
DRAMA--20th CENTURY
DRAMA--20th CENTURY--HISTORY AND CRITICISM
DRAMA--COLLECTIONS
DRAMA--HISTORY AND CRITICISM
DRAMA--THERAPEUTIC USE
DRAMA, MEDIEVAL
DRAMA FESTIVALS
FAULKNER, WILLIAM, 1897-1962
FAULKNER, WILLIAM 1897-1962--BIBLIOGRAPHY
FAULKNER, WILLIAM 1897-1962--CHARACTERS
FAULKNER, WILLIAM 1897-1962. ABSALOM, ABSALOM!
FAULKNER, WILLIAM 1897-1962. LIGHT IN AUGUST
FRENCH DRAMA
PAINTING
PAINTING--CATALOGS
PAINTING--HISTORY
PAINTING--GERMANY
PAINTING--ITALY
PAINTING, GERMAN
PAINTING, ITALIAN
PAINTING FROM PHOTOGRAPHS
UNITED STATES--CIVILIZATION
UNITED STATES--CONSTITUTIONAL LAW
UNITED STATES--HISTORY
UNITED STATES--HISTORY--REVOLUTION, 1775-1783
UNITED STATES--HISTORY--WAR OF 1812
UNITED STATES--HISTORY--CIVIL WAR, 1861-1865
UNITED STATES--SOCIAL CONDITIONS
UNITED STATES. CONGRESS
UNITED STATES. CONGRESS. SENATE
UNITED STATES SECURITIES AND EXCHANGE COMMISSION
UNITED STATES IN ART
UNITED STATES NAVAL EXPEDITION TO JAPAN, 1852-1854
WATER
WATER, DISTILLED
WATER, UNDERGROUND
WATER (IN RELIGION, FOLK-LORE, ETC.)
WATER BEDS (FURNITURE)

As you can see from the above, subject headings often have subdivisions. When looking up a topic, therefore, continue to look through the cards until you have seen all the subdivisions to make sure you do not miss your specific topic.



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# APPENDIX I

## GUIDE TO THE LIBRARY OF CONGRESS CLASSIFICATION

## GUIDE TO THE LIBRARY OF CONGRESS CLASSIFICATION SYSTEM



The Library of Congress Classification System is used by most college and university libraries in the United States. This system uses both letters and numbers in order to group books on the shelves by subject.

Every book is assigned its own Call Number (other names: classification number, book number, LC number, shelf number).

No two books have the same call number unless they are exact copies!

Every Call Number has two basic lines:

* The first line starts with one or two capital letters (sometimes three) followed by a number
* The second line starts with a decimal point followed by a single capital letter and then a number. Additional letters and numbers may follow.

| Examples: | | | | |
|---|---|---|---|---|
| | First line | PE1625 | PN35 | F65 |
| | Second Line | .R2 | .E7 | .N2S35 |
| | Third Line | | 1980 | v.7 |

* In some cases a third line is used to note additional information, such as the year of the edition, volume, or part number. See the second and third examples just above.

Reference Books have the letters "Ref." typed above the first line of the call number. Reference materials must only be used in the library and are shelved separately from the circulating collection. Types of reference books include atlases, almanacs, dictionaries, encyclopedias, and handbooks.

Example:
Ref.
PE1625
.R6

How Call Numbers in the Library Catalog (Comcat) compare to Those Typed on Labels Attached to the Books

In order to save space, call numbers in the catalog are typed on one line. The second line begins at the decimal point followed immediately by a capital letter.

| Example: | Call Number in Catalog | Call Number on Book Label |
|---|---|---|
| * | Ref.HD6515.A4H67 | Ref.<br>HD6515<br>.A4H67 |
| ** | RA75.3.A55 1985 | RA75.3<br>.A55<br>1985 |

REMEMBER! EVERY BOOK HAS ONLY ONE CORRECT PLACE ON THE SHELVES. YOU MUST COMPARE EVERY BOOK WITH ITS NEIGHBORS BOTH IN FRONT AND BEHIND!

PLEASE TURN OVER FOR RULES FOR ARRANGING BOOKS BY LC CALL NUMBER

# APPENDIX J

## ARRANGING BOOKS BY L.C. CALL NUMBER

* SEPARATE REFERENCE BOOKS (Ref. before the call number) FROM CIRCULATING BOOKS. DON'T MIX THEM TOGETHER EITHER ON BOOK TRUCKS OR ON SHELVES!

* COMPARE THE FIRST LINES OF THE BOOKS YOU ARE ARRANGING OR RESHELVING. USE THE FOLLOWING RULES:

  1) Arrange by Alphabetical Order, A to Z. All "A's" should come before all "B's", all "C's" before all "D's", etc. All two or three letter combinations should also be sorted A to Z. "P" before "PE" before "PN", "K" before "KF" before "KFN".

  2) Numbers should be arranged in order 1 to 9999.99.

* IF TWO CALL NUMBERS HAVE EXACTLY THE SAME FIRST LINES, COMPARE THE SECOND LINES. USE THE FOLLOWING RULES:

  1) Letters should be sorted A to Z.

  2) All numbers on the second line should be read as decimal fractions! Smaller fractions come first.

| Examples: | | | |
|---|---|---|---|
| | PE250<br>.T2538 | before | PE250<br>.T8 |
| | QA76.3<br>.B75E521 | before | QA76.3<br>.B75E67 |
| | F22<br>.C147P39 | before | F22<br>.C247P15 |

* IF TWO CALL NUMBERS HAVE EXACTLY THE SAME FIRST AND SECOND LINES, COMPARE THE THIRD AND FOLLOWING LINES. THIS INFORMATION LISTS EDITIONS, VOLUMES, PARTS, SUPPLEMENTS, ETC. USE THE FOLLOWING RULE:

  1) Arrange matching symbols by number, smallest to largest.

| Examples: | | | |
|---|---|---|---|
| Editions | PN56<br>.R52<br>1952 | before | PN56<br>.R52<br>1976 |
| Volumes | AE7<br>.J3<br>v.3 | before | AE7<br>.J3<br>v.5 |
| Supplements | Q5<br>..A2<br>suppl.3 | before | Q5<br>.A2<br>suppl.7 |
| Parts | K35<br>.N5<br>pt.6 | before | K35<br>.N5<br>pt.22 |



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# APPENDIX K

## LIBRARY OF CONGRESS CLASSIFICATION SYSTEM

Library of Congress Classification System

- A General Works
- B Philosophy & Religion
  - BD Metaphysics
  - BF Psychology
  - BJ Ethics
  - BM Judaism
  - BR Christianity
- C History (General—Civilization, Genealogy)
- D History—Old World
  - DA Great Britain
  - DC France
  - DE Classical antiquity
  - DF Greece
  - DK Russia
  - DS Asia
  - DT Africa
- E American History & General U.S. History
- F American History (local) & Latin American
- G Geography, Anthropology, Folklore, Sports, & Other
- H Social Sciences
  - HA Statistics
  - HB-HD Economics
  - HF Commerce
  - HG-HJ Finance
  - HM Sociology
  - HQ Family, marriage, home
  - HV Social pathology
- J Political Science
- K Law
- L Education
- M Music
- N Fine Arts
  - NA Architecture
  - NB Sculpture
  - ND Painting
- P Language & Literature
  - PA Classical language & literature
  - PB Celtic language
  - PC Romance language
  - PD Germanic language
  - PE English language
  - PN Literary History & collections
  - PQ Romance literature
  - PR English literature
  - PS American literature
  - PT Teutonic literature
  - PZ Fiction & Juvenile literature
- Q Science
  - QA Mathematics
  - QB Astronomy
  - QC Physics
  - QD Chemistry
  - QE Geology
  - QH Natural history
  - QK Botany
  - QL Zoology
  - QM Human anatomy
  - QP Physiology
  - QR Bacteriology
- R Medicine
  - RD Surgery
  - RS Pharmacy
  - RT Nursing
- S Agriculture, forestry, animal culture, fish culture, hunting
- T Technology
- U Military Science
- V Naval Science
- Z Bibliography and library science

**APPENDIX L**

**EXERCISE WORKSHEET**

## Appendix L

## Exercise Worksheet

1. Use the information on this cover page of an sample book to find the call number of this book.

2. Use the subject heading in the catalog unit of this book to find the other books under the same subject.
   List the title, author, and call number of the books you can find.

Prentice-Hall Computer Science

# PROGRAMMING LANGUAGES

SECOND EDITION

## Design and Implementation

Terrence W. Pratt



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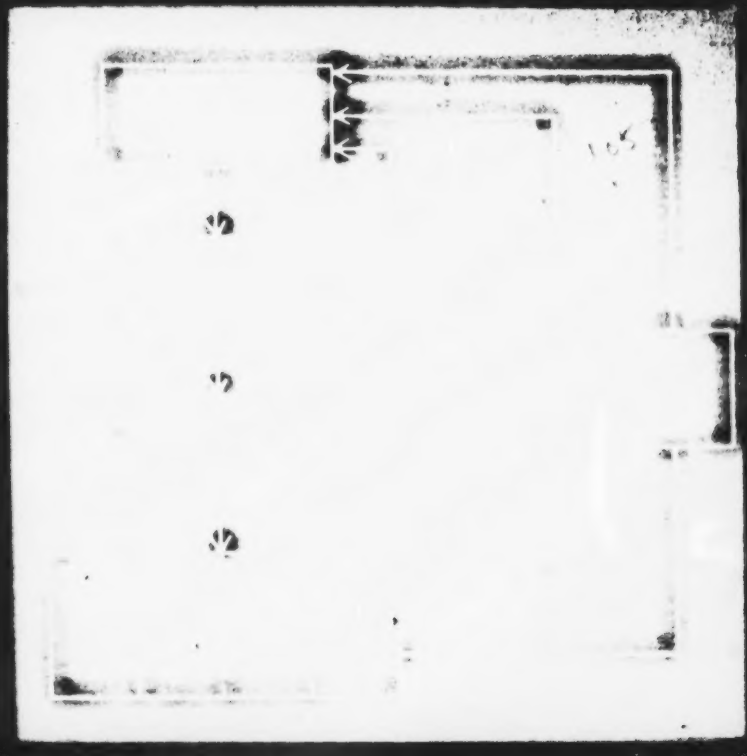
# COMPUTER SYSTEM ARCHITECTURE

SECOND EDITION

M. MORRIS MANO



major: Computer Science



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major: Communication Arts



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# MEDIA IMPACT

## An Introduction to Mass Media

BARNES & NOBLE
NO RETURN W/O LABEL
189 $ 2550

major: Communication Arts



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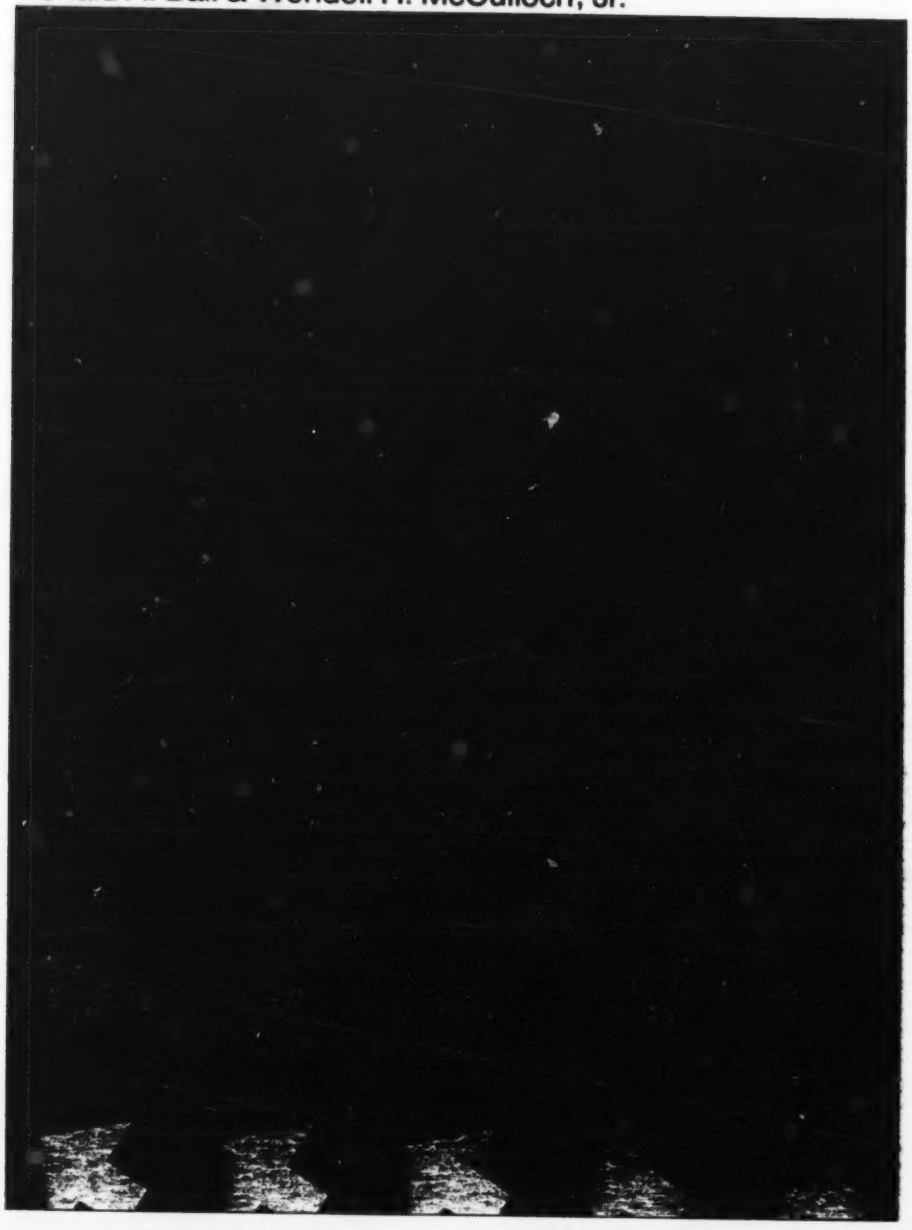
# INTERNATIONAL BUSINESS:
INTRODUCTION AND ESSENTIALS

Donald A. Ball & Wendell H. McCulloch, Jr.



major: MBA



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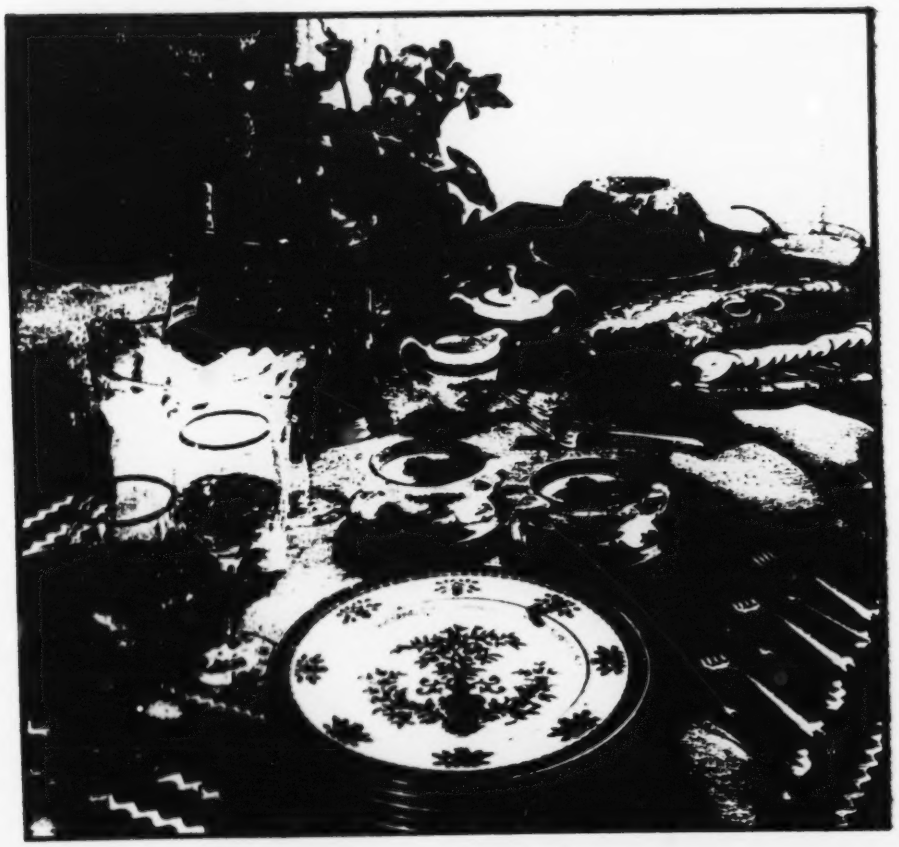
makjor: Hotel Management

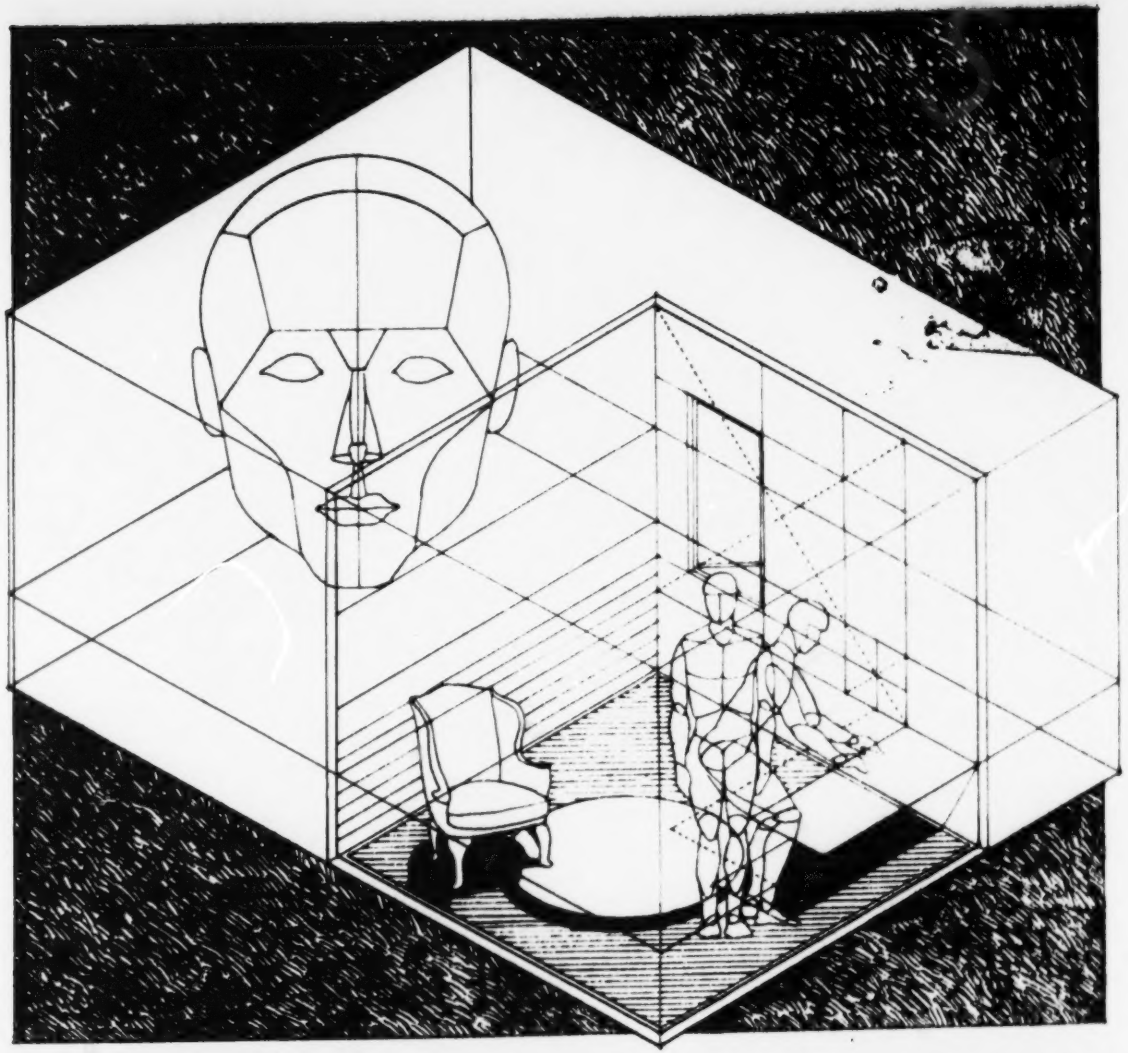
BERNARD R. SPLAVER

# SUCCESSFUL CATERING



SECOND EDITION

major: Fine Arts



# INTERIOR DESIGN

## *ILLUSTRATED*

**FRANCIS D.K. CHING**

BEST COPY AVAILABLE

major: Human Relations

# Human Behavior and World Politics

AN INTRODUCTION TO INTERNATIONAL RELATIONS

RALPH PETTMAN



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**APPENDIX M**

**EVALUATION QUESTIONNAIRE**

**Appendix M**

**Evaluation Questionnaire**

In the interest of developing and maintaining training programs of high quality and standards which meet the needs of the student, your comments on the following statements would be greatly appreciated. Please check your response.

1. The subject matter was presented clearly and sequenced in a logic manner.

   Strongly Agree____ Agree____ Disagree____ Strongly Disagree____

2. The objectives of the lessons Clearly stated the intent of the lesson.

   Strongly Agree____ Agree____ Disagree____ Strongly Disagree____

3. The objectives were fully covered in the lesson material.

   Strongly Agree____ Agree____ Disagree____ Strongly Disagree____

4. The lesson activities, e.g. demonstration, practical exercise, oral question and answer were helpful in learning the lesson material.

   Strongly Agree____ Agree____ Disagree____ Strongly Disagree____

5. The amount of instructional time spent on each task was appropriate.

   Strongly Agree____ Agree____ Disagree____ Strongly Disagree____

6. The handouts were helpful in understanding the lesson.

Strongly____ Agree____ Disagree____ Strongly____
Agree Disagree

7. Sufficient time was given to prepare for exams.

Strongly____ Agree____ Disagree____ Strongly____
Agree Disagree

8. The test questions were related to the lesson material covered.

Strongly____ Agree____ Disagree____ Strongly____
Agree Disagree

9. A review of the exams was provided.

Strongly____ Agree____ Disagree____ Strongly____
Agree Disagree

10. The test directions were clear.

Strongly____ Agree____ Disagree____ Strongly____
Agree Disagree

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